TESTING & SPECIAL INSPECTION

STRUCTURAL SPECIAL INSPECTION AND TESTING

GENERAL

THESE PROVISIONS SHALL GOVERN THE QUALITY, WORKMANSHIP, AND REQUIREMENTS FOR WORK COVERED. MATERIALS OF CONSTRUCTION AND TESTS SHALL CONFORM TO THE APPLICABLE STANDARDS LISTED. THE CONTRACTOR SHALL PROVIDE A MINIMUM 48 HOUR NOTICE TO THE SPECIAL INSPECTION AGENCY FOR WORK THAT REQUIRES SPECIAL INSPECTION. THE CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR WITH THE USE OF A LIFT OR OTHER EQUIPMENT AS REQUIRED TO ALLOW ACCESS TO THE WORK THAT REQUIRES INSPECTION. THE CONTRACTOR SHALL PROVIDE THE SPECIAL INSPECTOR ACCESS TO THE APPROVED PLANS AND SPECIFICATIONS AND RETAIN SPECIAL INSPECTION RECORDS AT THE JOB-SITE.

DEFINITIONS

CONTINUOUS SPECIAL INSPECTION: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.

PERIODIC SPECIAL INSPECTION: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

REFERENCE STANDARDS (EDITIONS ADOPTED BY CURRENT GOVERNING INTERNATIONAL BUILDING CODE)

- IBC – INTERNATIONAL BUILDING CODE 2012
- AISC 341 – SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS; AMERICAN INSTITUTE OF STEEL CONSTRUCTION INC
- AISC 360 – SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS; AMERICAN INSTITUTE OF STEEL CONSTRUCTION INC
- ACI 318 – BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY; AMERICAN CONCRETE INSTITUTE
- RCSC – SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS; RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS
- AWS – AMERICAN WELDING SOCIETY
- ASTM – ASTM INTERNATIONAL
- TMS 402-11/602-11 BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES

REPORT REQUIREMENTS

SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS, AND SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT THE WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK. A FINAL REPORT DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON PRIOR TO THE START OF THE WORK BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL.

SCHEDULE OF STRUCTURAL INSPECTION AND TESTING	REFERENCE STANDARDS
STEEL	
* HIGH-STRENGTH BOLTS, NUTS, AND WASHERS:	
– CONFIRM IDENTIFICATION MARKINGS, LUBRICATION AND STORAGE CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360 N6
– PERIODICALLY INSPECT FAYING SURFACES OF SLIP-CRITICAL JOINTS	RCSC 9.3
– REVIEW MANUFACTURER'S CERTIFICATE OF COMPLIANCE INCLUDING MATERIAL IDENTIFICATION AND TESTING DATA	
– PERIODICALLY INSPECT ALL CONNECTIONS AT SNUG TIGHT CONDITION	AISC 360 N5.6, RCSC 9.1
– CONTINUOUSLY INSPECT PREINSTALLATION TESTING AND CALIBRATION PROCESS FOR PRETENSIONED AND SLIP CRITICAL CONNECTIONS	RCSC 7
– PERIODICALLY INSPECT PRETENSIONED AND SLIP-CRITICAL TYPE CONNECTIONS USING TURN-OF-NUT WITH MATCH-MARKING, TWIST-OFF BOLTS OR DIRECT TENSION INDICATOR OR CONTINUOUSLY INSPECT PRETENSIONED AND SLIP-CRITICAL TYPE CONNECTIONS USING TURN-OF-NUT WITHOUT MATCH-MARKING OR CALIBRATED WRENCH METHOD	AISC 360 N5.6, RCSC 9.2 & 9.3
*STRUCTURAL STEEL:	
– CONFIRM IDENTIFICATION MARKINGS CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360 N5.2
– REVIEW MANUFACTURER'S CERTIFICATE OF COMPLIANCE INCLUDING CERTIFIED TEST REPORTS	
– PERIODICALLY INSPECT STEEL CONNECTION DETAILS FOR COMPLIANCE WITH THE DETAILS SHOWN ON THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360 & AISC 341
* METAL DECK:	
– CONFIRM IDENTIFICATION MARKINGS CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360 N5.6, CBC TABLE 1705.2.2
– REVIEW MANUFACTURER'S CERTIFICATE OF COMPLIANCE	
* WELDING (SHOP AND FIELD):	
– VERIFY WELDERS QUALIFICATIONS, PROCEDURE QUALIFICATION RECORDS (PQR) AND WELDING PROCEDURE SPECIFICATIONS (WPS) PRIOR TO THE START OF WORK	AISC 341 J6, AWS D1.3, AWS D1.4 CBC 1705.2.2.1
– CONFIRM IDENTIFICATION MARKINGS OF WELD FILLER MATERIALS CONFORM TO AWS DESIGNATION LISTED IN THE WPS	AISC 360 N5.2
– REVIEW MANUFACTURER'S CERTIFICATE OF COMPLIANCE OF WELD FILLER MATERIALS	
– CONTINUOUSLY INSPECT COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	AWS D1.1 6.9, AISC 341 J6
– CONTINUOUSLY INSPECT MULTIPASS FILLET WELDS	AWS D1.1 6.9, AISC 341 J6
– CONTINUOUSLY INSPECT PLUG AND SLOT WELDS	AWS D1.1 6.9, AISC 341 J6
– CONTINUOUSLY INSPECT SINGLE PASS FILLET WELDS > 5/16"	AWS D1.1 6.9, AISC 341 J6
– PERIODICALLY INSPECT SINGLE PASS FILLET WELDS ≤5/16"	AWS D1.1 6.9, AISC 341 J6
– PERIODICALLY INSPECT METAL DECK WELDS	AWS D1.3, CBC TABLE 1705.2.2
– PERFORM CHEMICAL TESTING OF REINFORCING STEEL OTHER THAN ASTM A706 TO VERIFY WELDABILITY	AWS D1.4, ACI 318 3.5.2, CBC 1705.12.1
– CONTINUOUSLY INSPECT WELDING OF REINFORCING STEEL	ACI 318 3.5.2, CBC TABLE 1705.2.2
– PERIODICALLY INSPECT INSTALLATION OF WELDED STUDS	AWS D1.1
– PERIODICALLY INSPECT WELDING OF STAIRS AND RAILING SYSTEMS	AWS D1.1 6.9, AISC 341 J6
– PERFORM ULTRASONIC TESTING OF BASE METAL THICKER THAN 1 1/2" WHERE THE CONNECTED MATERIAL IS GREATER THAN 3/4" AND CONTAINS CJP GROOVE WELDS	AISC 341 J6
– PERFORM ULTRASONIC TESTING OF CJP GROOVE WELDS IN MATERIALS 5/16" THICK OR GREATER	AISC 341 J6
CONCRETE	CBC 1704.4, CBC 1704A.4 CBC TABLE 1705.3
* CONCRETE	
– REVIEW CERTIFIED MILL TEST REPORTS FOR REINFORCING STEEL	CBC 1705.3
– PERIODICALLY INSPECT REINFORCING STEEL AND PLACEMENT	ACI 318 7.1-7.8, CBC 1705.3
– PERIODICALLY INSPECT ANCHOR RODS AND ANCHOR BOLTS PRIOR TO CONCRETE PLACEMENT	CBC 1705.3
– VERIFY USE OF ENGINEER OF RECORD REVIEWED MIX DESIGN AND MATERIAL CERTIFICATE	ACI 318 5.2-5.4
– CONTINUOUSLY INSPECT CONCRETE PLACEMENT	
– PERIODICALLY INSPECT CURING MATERIAL FOR CONFORMANCE WITH APPROVED CONTRACT DOCUMENTS AND PLACEMENT	
– PERIODICALLY INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS	
– VERIFY CONCRETE STRENGTH PRIOR TO REMOVAL OF SHORING AND FORMS FROM BEAMS AND ELEVATED SLABS	
– FABRICATE 6" DIAMETER X 12" CYLINDER TEST SPECIMENS	ACI 318 5.6, ASTM C31
– PERFORM SLUMP TESTING AT THE TIME CONCRETE IS SAMPLED	ASTM C143
– PERFORM AIR CONTENT TESTING AT THE TIME CONCRETE IS SAMPLED	ASTM C173
– RECORD TEMPERATURE OF CONCRETE AT THE TIME CONCRETE IS SAMPLED	ASTM C1064
– PERFORM CONCRETE COMPRESSION TESTING	ASTM C39
NONSHRINK/EXPANSIVE GROUT	
– CONFIRM MATERIALS COMPLY TO SPECIFICATIONS	
– CONTINUOUSLY INSPECT INSTALLATION	
– FABRICATE TESTING SAMPLES	ASTM C109
– PERFORM COMPRESSION TESTING	ASTM C109

GENERAL NOTES

FOUNDATION INSPECTION

1. PRIOR TO REQUESTING A FOUNDATION INSPECTION, THE CONTRACTOR SHALL REQUEST THAT THE SOIL ENGINEER OF RECORD PROVIDE A FIELD REPORT WHICH SHALL STATE THE FOLLOWING:
   – THE BUILDING PAD WAS PREPARED AND COMPACTED IN ACCORDANCE WITH THE SOIL REPORT RECOMMENDATIONS.
   – THE FOUNDATION EXCAVATION DEPTH AND BACKFILL MATERIALS, AND DRAINAGE, SUBSTANTIALLY CONFORMS WITH THE SOIL REPORT AND APPROVED PLANS.
2. PRIOR TO FINAL INSPECTION FOR ANY BUILDING OR STRUCTURE, THE CONTRACTOR SHALL REQUEST THAT THE SOIL ENGINEER OF RECORD ISSUE A FINAL REPORT STATING THE COMPLETED PAD, FOUNDATION, FINISH GRADING, DRAINAGE AND ASSOCIATED SITE WORK SUBSTANTIALLY CONFORMS TO THE APPROVED PLANS, SPECIFICATIONS AND INVESTIGATION.

STAIR DESIGN

1. CONTRACTOR SHALL PROVIDE COMPLETE DRAWINGS FOR ALL STAIRWAYS. STAIRS, STAIR LANDINGS, STAIR MEMBERS AND SUPPORTS NOT SHOWN SHALL BE DESIGNED, DETAILED AND SEALED BY A REGISTERED PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER IN THE STATE OF CALIFORNIA.
2. ALL REQUIRED EMBEDDED ANGLES AND PLATES SHALL BE PART OF THE STAIR DESIGN AND DETAILING.
3. STAIRWAYS SHALL BE DESIGNED FOR DEAD LOAD, 100 PSF LIVE LOAD AND SEISMIC LOADS.
4. STAIRS AND RELATED ITEMS SHALL COMPLY WITH THE IBC.
5. REFER TO THE ARCHITECTURAL DRAWINGS FOR STAIRWAY DIMENSIONS, DETAILS AND OTHER REQUIREMENTS.
6. SUPPORT STAIRS FROM THE MAIN STRUCTURE ONLY AT LOCATIONS SHOWN.
7. SHOP DRAWINGS AND DESIGN CALCULATIONS SHALL BE SUBMITTED ACCORDING TO THE REQUIREMENTS INDICATED IN THE SPECIFICATIONS.

LEED

1. CONTRACTOR TO ATTAIN 1 LEED POINT MINIMUM THROUGH USE OF STRUCTURAL STEEL WITH RECYCLED CONTENT.
2. CONTRACTOR TO ATTAIN 1 LEED POINT MINIMUM THROUGH USE OF FLY ASH/GROUND GRANULATED BLAST FURNACE SLAG IN FOOTING CONCRETE.

CONSTRUCTION LIABILITY

THE CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS AGREE THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT LIMITED TO NORMAL WORKING HOURS, AND THE CONSTRUCTION CONTRACTOR AND HIS SUBCONTRACTORS FURTHER AGREE TO DEFEND, INDEMNIFY AND HOLD THE DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.

ABBREVIATIONS

@	AT	LS	LAG SCREW(S)
Ø	DIAMETER	LL	LIVE LOAD
#	NUMBER	LLBB	LONG LEGS BACK TO BACK
		LLH	LONG LEG HORIZONTAL
AB	ANCHOR BOLT	LLV	LONG LEG VERTICAL
APPROX	APPROXIMATE(LY)	LOC	LOCATION
ARCH.	ARCHITECT(URAL)	LONGIT	LONGITUDINAL
ATS	ANCHOR TIE SYSTEM	LW	LIGHT WEIGHT
BF	BOUNDARY FASTENING OR BRACED FRAME	MB	MACHINE BOLT(S)
		MAX	MAXIMUM
BLK	BLOCK	MECH	MECHANICAL
BLKG	BLOCKING	MFR	MANUFACTURER
BLDG	BUILDING	MIN	MINIMUM
BM	BEAM	MISC	MISCELLANEOUS
BN	BOUNDARY NAILING		
BOT	BOTTOM	(N)	NEW
BOF	BOTTOM OF FOOTING	NIC	NOT IN CONTRACT
		No.	NUMBER
℄	CENTER LINE	NOM	NOMINAL
CBC	CALIFORNIA BLDG CODE	NS	NEAR SIDE
CIDH	CAST IN DRILLED HOLE	NTS	NOT TO SCALE
CJ	CONSTRUCTION JOINT		
CJP	COMPLETE JT PENETRATION	OC	ON CENTER
CLR	CLEAR	OD	OUTSIDE DIAMETER
CLG	CEILING	OH	OPPOSITE HAND
CMP	CORRUGATED METAL PIPE	OWSJ	OPEN WEB STEEL JOIST
CMU	CONCRETE MASONRY UNIT		
COL	COLUMN	PL	METAL PLATE
CONC	CONCRETE	PDF	POWDER DRIVEN FASTENER
CONN	CONNECTION	PTDF	PRESERVATIVE TREATED DOUGLAS FIR
CONST	CONSTRUCTION	PLY	PLYWOOD
CONT	CONTINUOUS	PJP	PARTIAL JOINT PENETRATION
COR	CONTRACTING OFFICER REPRESENTATIVE	PQR	PROCEDURE QUALIFYING REPORT
		PSF	POUNDS PER SQUARE FOOT
CSK	COUNTERSINK	PSI	POUNDS PER SQUARE INCH
		PT	POINT OR POST TENSION
DBL	DOUBLE		
DCW	DEMAND CRITICAL WELD	RAD OR R	RADIUS
DET	DETAIL	RCP	REINF CONC PIPE
DF	DOUGLAS FIR	REINF	REINFORCED, REINFORCING
DIAG	DIAGONAL	REQ'D	REQUIRED
DN	DOWN	REV	REVISION
DO	DITTO	RS	ROUGH SAWN
DWG	DRAWING	RWD	REDWOOD
(E)	EXISTING	S.A.D.	SEE ARCH. DRAWINGS
EA	EACH	SCHED	SCHEDULE
EF	EDGE FASTENING	SEC	SECTION
EL	ELEVATION	SFRS	SEISMIC FORCE RESISTING SYSTEM
ELECT	ELECTRICAL	SHT	SHEET
ELEV	ELEVATOR	SHTG	SHEATHING
EN	EDGE NAILING	SIM	SIMILAR
EQ	EQUAL	SM	SHEETMETAL
EW	EACH WAY	SMS	SHEET METAL SCREW
		SPEC(S)	SPECIFICATION(S)
FBC	FRAMED BEAM CONN	SQ	SQUARE
FIN	FINISH(ED)	STAG	STAGGERED
FND	FOUNDATION	STD	STANDARD
FOC	FACE OF CONCRETE	STL	STEEL
FOM	FACE OF MASONRY	STS	SELF TAPPING SCREW
FOS	FACE OF STUD(S)	SYM	SYMMETRICAL
FS	FAR SIDE		
FTG	FOOTING		
		TBR	TO BE REMOVED
Ga	GAUGE	TN	TOE NAIL
GALV	GALVANIZED	T.O.	TOP OF
GL	GLUED LAMINATED BEAM	TOF	TOP OF FOOTING
		T.O.P.	TOP OF PLATE
HD	HOLDOWN	TOS	TOP OF SLAB OR STEEL
HDPE	HIGH DENSITY POLYETHYLENE	T.O.W.	TOP OF WALL
HDR	HEADER	TYP	TYPICAL
HEX	HEXAGONAL		
HGR	HANGER	UON	UNLESS OTHERWISE NOTED
HORIZ	HORIZONTAL		
HSB	HIGH STRENGTH BOLT	VERT	VERTICAL
HSS	HOLLOW STRUCT SECTION	VIF	VERIFY IN FIELD
HT	HEIGHT		
		W/	WITH
IBC	INTERNATIONAL BLDG CODE	WF	WIDE FLANGE
ID	INSIDE DIAMETER	WFRS	WIND FORCE RESISTING SYSTEM
INSP	INSPECTION/INSPECTOR	WP	WATERPROOF OR WORK POINT
INSUL	INSULATION	WPS	WELDING PROCEDURE SPECIFICATIONS
		WT	WEIGHT
JT	JOINT	WWR	WELDED WIRE REINFORCEMENT

SYMBOLS

1	SECTION LETTER OR DETAIL NUMBER.
S501	SHEET NUMBER WHERE SECTION OR DETAIL IS SHOWN.
BF-1	INDICATES WALL ELEVATION TO BE VIEWED FROM SYMBOL SIDE.
±	INDICATES AN APPROXIMATE DIMENSION OR ELEVATION. THE CONTRACTOR IS TO VERIFY INFORMATION AS REQUIRED TO COMPLETE CONSTRUCTION.
←	INDICATES DIRECTION OF ROOF SLOPE.

PROJECT DATA

PROJECT DATA

1. PLANS AND CALCULATIONS FOR THE STRUCTURAL DESIGN WERE BASED ON
   – THE 2012 INTERNATIONAL BUILDING CODE.
   – VA SEISMIC DESIGN REQUIREMENTS H-18-8
   – SOILS REPORT BY MATRISCOPE ENGINEERING LABORATORIES INC. DATED MARCH 6, 2014.
2. DESIGN LOADS:

VERTICAL

ROOF DEAD LOAD	19	PSF	
ROOF LIVE LOAD	20	PSF	AND REDUCED PER CODE
2ND FLOOR DEAD LOAD	58	PSF	
2ND FLOOR LIVE LOAD	50	PSF	AND REDUCED PER CODE
2ND FLOOR PARTITION LOAD	15	PSF	

LATERAL

WIND PER ASCE 7-10: 110 MPH BASIC WIND SPEED (3 SECOND GUST)
WIND IMPORTANCE FACTOR, I = 1.0
EXPOSURE CATEGORY C

SEISMIC PER ASCE 7-10: SITE CLASS D
S_S = 0.549 S_1 = 0.261
S_{DS} = 0.498 S_{D1} = 0.327

OCCUPANCY CATEGORY II
SEISMIC IMPORTANCE FACTOR = 1.0
SEISMIC DESIGN CATEGORY D
R = 3.25 STEEL ORDINARY CONCENTRIC BRACED FRAME
V = CsW = 0.154W (STRENGTH DESIGN)

FOUNDATION

BEARING PRESSURES: 3000 PSF DEAD + LIVE LOAD
4000 PSF TOTAL LOADS

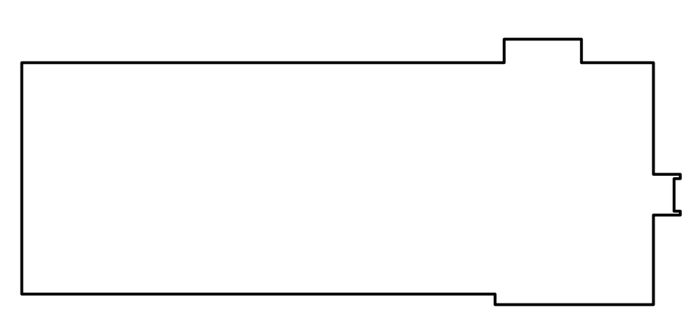
STRUCTURAL DRAWING INDEX

Revisions:	Date
FINAL BID DOCUMENTS (14-251)	4/14/16
100% CONSTRUCTION DOCUMENTS (14-248)	1/22/16
100% DESIGN DEVELOPMENT (14-244)	10/23/15
50% DESIGN DEVELOPMENT (14-233)	8/21/15
100% SCHEMATIC DESIGN (14-185)	3/6/15

CONSULTANTS:

BIGGS CARDOSA ASSOCIATES INC
STRUCTURAL ENGINEERS
865 The Alameda
San Jose, California 95126
408-296-5515

KEY PLAN



STAMP

REGISTERED PROFESSIONAL ENGINEER
MARK A. CARDOSA
No. S2279
Exp. 3/31/18
STRUCTURAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEERS:

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PO# 14-308-39

Drawing Title	GENERAL INFORMATION
Approved: Project Director	
Project Title	CONSTRUCT PRIMARY CARE SERVICES BLDG.
Location	10535 HOSPITAL WAY, MATHER, CA.
Date	4/14/16
Checked	DLL
Drawn	JJD
Project Number	612-400
Building Number	642
Drawing Number	S000
Dwg. of	

Office of Facilities Management

Department of Veterans Affairs

MATERIAL SPECIFICATIONS

SECTION 01 33 23
SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 2 – PRODUCTS (Not Used)

END OF SECTION 01 33 23

SECTION 01 45 29
TESTING LABORATORY SERVICES

PART 2 – PRODUCTS (Not Used)

END OF SECTION 01 45 29

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 2 – PRODUCTS:

2.1 FORMS:

A. WOOD: PS 20 FREE FROM LOOSE KNOTS AND SUITABLE TO FACILITATE FINISHING CONCRETE SURFACE SPECIFIED; TONGUE AND GROOVED.

B. PLYWOOD: PS-1 EXTERIOR GRADE B-B (CONCRETE-FORM) 16 MM (5/8 INCH), OR 20 MM (3/4 INCH) THICK FOR UNLINED CONTACT FORM. B-B HIGH DENSITY CONCRETE FORM OVERLAY OPTIONAL.

2.2 MATERIALS:

A. PORTLAND CEMENT: ASTM C150 TYPE II.

B. FLY ASH: ASTM C618, CLASS C OR F
1. FLY ASH MAY SUBSTITUTE FOR PORTLAND CEMENT FROM A MINIMUM OF 15% UP TO A MAXIMUM OF 25% OF TOTAL CEMENTITIOUS MATERIALS BY WEIGHT. SUBSTITUTIONS THAT COMBINE FLY ASH AND GROUND GRANULATED BLAST-FURNACE SLAG ARE LIMITED TO A COMBINED TOTAL OF 50% OF THE TOTAL CEMENTITIOUS MATERIAL BY WEIGHT WITH FLY ASH NO MORE THAN 25% OF THE TOTAL CEMENTITIOUS MATERIALS BY WEIGHT. REDUCE SLAG AND FLY ASH SUBSTITUTION RATES BY AT LEAST 50% FOR COLD WEATHER CONCRETING AS DEFINED BY ACI 306.1.

C. GROUND-GRANULATED BLAST-FURNACE SLAG: ASTM C989 GRADES 100 OR 120.
1. GROUND-GRANULATED BLAST-FURNACE SLAG MAY SUBSTITUTE FOR PORTLAND CEMENT UP TO A MAXIMUM OF 50% OF THE TOTAL CEMENTITIOUS MATERIAL BY WEIGHT.

D. COARSE AGGREGATE: ASTM C33.
1. SIZE 67 OR SIZE 467 MAY BE USED FOR FOOTINGS.
2. MAXIMUM SIZE OF COARSE AGGREGATES NOT MORE THAN ONE-FIFTH OF NARROWEST DIMENSION BETWEEN SIDES OF FORMS, ONE-THIRD OF DEPTH OF SLABS, NOR THREE-FOURTH OF MINIMUM CLEAR SPACING BETWEEN REINFORCING BARS.

E. COARSE AGGREGATE (LIGHTWEIGHT): ASTM C330

F. FINE AGGREGATE: ASTM C33.

G. MIXING WATER: FRESH, CLEAN, AND POTABLE.

H. ADMIXTURES:
1. WATER REDUCING ADMIXTURE: ASTM C494, TYPE A AND NOT CONTAIN MORE CHLORIDE IONS THAN ARE PRESENT IN MUNICIPAL DRINKING WATER.
2. WATER REDUCING, RETARDING ADMIXTURE: ASTM C494, TYPE D AND NOT CONTAIN MORE CHLORIDE IONS THAN ARE PRESENT IN MUNICIPAL DRINKING WATER.
3. HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPERPLASTICIZER): ASTM C494, TYPE F, AND NOT CONTAIN MORE CHLORIDE IONS THAN ARE PRESENT IN MUNICIPAL DRINKING WATER.
4. HIGH-RANGE WATER-REDUCING AND RETARDING ADMIXTURE: ASTM C494, TYPE G, AND NOT CONTAIN MORE CHLORIDE IONS THAN ARE PRESENT IN MUNICIPAL DRINKING WATER.
5. AIR ENTRAINING ADMIXTURE: ASTM C260.
6. PROHIBITED ADMIXTURES: CALCIUM CHLORIDE, THIOCYANATE OR ADMIXTURES CONTAINING MORE THAN 0.05 PERCENT CHLORIDE IONS ARE NOT PERMITTED.

I. UNDERSLAB VAPOR RETARDER/BARRIER SHEETING SHALL BE 15 MIL AND COMPLY WITH ASTM E1745, CLASS A; STATED BY MANUFACTURER AS SUITABLE FOR INSTALLATION IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS.

J. REINFORCING STEEL:
1. BARS FOR REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, DEFORMED LOW-ALLOY STEEL BARS FOR ALL FOOTING REINFORCING AND BARS TO BE WELDED. ASTM A615, GRADE 60 BARS MAY BE SUBSTITUTED IF THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS DOES NOT EXCEED THE SPECIFIED YIELD STRENGTH BY MORE THAN 18,000 PSI (RETEST SHALL NOT EXCEED THIS VALUE BY MORE THAN AN ADDITIONAL 3,000 PSI) AND THE RATIO OF THE ACTUAL ULTIMATE TENSILE STRESS TO THE ACTUAL TENSILE YIELD STRENGTH IS NOT LESS THAN 1.25.
2. BARS FOR REINFORCEMENT NOT NOTED ABOVE SHALL BE DEFORMED GRADE STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A706 OR A615 GRADE 60.
3. BARS SHALL BE UNCOATED UNLESS NOTED OTHERWISE.

K. WELDED WIRE FABRIC: ASTM A185.

L. COLD DRAWN STEEL WIRE: ASTM A82.

M. WELDING ELECTRODES: PER TABLE 5-1 OF AWS D1.4.

N. MECHANICAL COUPLING DEVICES: SHALL DEVELOP 125% OF THE MINIMUM YIELD STRENGTH OF THE BARS BEING SPLICED.

O. SUPPORTS, SPACERS, AND CHAIRS: TYPES WHICH WILL HOLD REINFORCEMENT IN POSITION SHOWN IN ACCORDANCE WITH REQUIREMENTS OF ACI 318 EXCEPT AS SPECIFIED.

P. SHEET MATERIALS FOR CURING CONCRETE: ASTM C171.

Q. LIQUID MEMBRANE-FORMING COMPOUNDS FOR CURING CONCRETE: ASTM C309, TYPE I, WITH FUGITIVE DYE, AND SHALL MEET THE REQUIREMENTS OF ASTM C1315. COMPOUND SHALL BE COMPATIBLE WITH SCHEDULED SURFACE TREATMENT, SUCH AS PAINT AND RESILIENT TILE, AND SHALL NOT DISCOLOR CONCRETE SURFACE.

R. MOISTURE VAPOR EMISSIONS & ALKALINITY CONTROL SEALER: 100% ACTIVE COLORLESS AQUEOUS SILICONATE SOLUTION CONCRETE SURFACE.
1. ASTM C1315 TYPE 1 CLASS A, AND ASTM C309 TYPE 1 CLASS A, PENETRATING PRODUCT TO HAVE NO LESS THAN 34% SOLID CONTENT, LEAVING NO SHEEN, VOLATILE ORGANIC COMPOUND (VOC) CONTENT RATING AS REQUIRED TO SUITE REGULATORY REQUIREMENTS. THE PRODUCT SHALL HAVE AT LEAST A FIVE (5) YEAR DOCUMENTED HISTORY IN CONTROLLING MOISTURE VAPOR EMISSION FROM DAMAGING FLOOR COVERING, COMPATIBLE WITH ALL FINISH MATERIALS.
2. MVE 15-YEAR WARRANTY:
a. WHEN A FLOOR COVERING IS INSTALLED ON A BELOW GRADE, ON GRADE, OR ABOVE GRADE CONCRETE SLAB TREATED WITH MOISTURE VAPOR EMISSIONS & ALKALINITY CONTROL SEALER ACCORDING TO MANUFACTURER'S INSTRUCTION, SEALER MANUFACTURER SHALL WARRANT THE FLOOR COVERING SYSTEM AGAINST FAILURE DUE TO MOISTURE VAPOR MIGRATION OR MOISTURE-BORN CONTAMINATES FOR A PERIOD OF FIFTEEN (15) YEARS FROM THE DATE OF ORIGINAL INSTALLATION. THE WARRANTY SHALL COVER ALL LABOR AND MATERIALS NEEDED TO REPLACE ALL FLOOR COVERING THAT FAILS DUE TO MOISTURE VAPOR EMISSION & MOISTURE BORN CONTAMINATES.

S. NON-SHRINK GROUT (NON-METALLIC):
1. ASTM C1107, PRE-MIXED, PRODUCE A COMPRESSIVE STRENGTH OF AT LEAST 18 MPA AT THREE DAYS AND 35 MPA (5000 PSI) AT 28 DAYS. FURNISH TEST DATA FROM AN INDEPENDENT LABORATORY INDICATING THAT THE GROUT WHEN PLACED AT A FLUID CONSISTENCY SHALL ACHIEVE 95 PERCENT BEARING UNDER A 1200 MM X 1200 MM (4 FOOT BY 4 FOOT) BASE PLATE.
2. WHERE HIGH FLUIDITY OR INCREASED PLACING TIME IS REQUIRED, FURNISH TEST DATA FROM AN INDEPENDENT LABORATORY INDICATING THAT THE GROUT WHEN PLACED AT A FLUID CONSISTENCY SHALL ACHIEVE 95 PERCENT UNDER AN 450 MM X 900 MM (18 INCH BY 36 INCH) BASE PLATE.

T. POST INSTALLED ANCHORING SYSTEMS:
1. ADHESIVE ANCHORING SYSTEM SHALL BE HILTI-HY 200 (ESR-3187) OR APPROVED EQUAL WITH A CURRENT ICC/IAMPO EVUALATION REPORT.

2.3 CONCRETE MIXES:

A. MIX DESIGNS: PROPORTIONED IN ACCORDANCE WITH SECTION 5.3, "PROPORTIONING ON THE BASIS OF FIELD EXPERIENCE AND/OR TRIAL MIXTURES" OF ACI 318.
1. IF TRIAL MIXES ARE USED, MAKE A SET OF AT LEAST 6 CYLINDERS IN ACCORDANCE WITH ASTM C192 FOR TEST PURPOSES FROM EACH TRIAL MIX; TEST THREE FOR COMPRESSIVE STRENGTH AT 7 DAYS AND THREE AT 28 DAYS.
2. SUBMIT A REPORT OF RESULTS OF EACH TEST SERIES, INCLUDE A DETAILED LISTING OF THE PROPORTIONS OF TRIAL MIX OR MIXES, INCLUDING CEMENT, FLY ASH, GROUND-GRANULATED BLAST-FURNACE SLAG, ADMIXTURES, WEIGHT OF FINE AND COARSE AGGREGATE PER M3 (CUBIC YARD) MEASURED DRY RODDED AND DAMP LOOSE, SPECIFIC GRAVITY, FINENESS MODULUS, PERCENTAGE OF MOISTURE, AIR CONTENT, WATER-CEMENTITIOUS MATERIAL RATIO, AND CONSISTENCY OF EACH CYLINDER IN TERMS OF SLUMP.
3. PREPARE A CURVE SHOWING RELATIONSHIP BETWEEN WATER-CEMENTITIOUS MATERIAL RATIO AT 7-DAY AND 28-DAY COMPRESSIVE STRENGTHS. PLOT EACH CURVE USING AT LEAST THREE SPECIMENS.
4. IF THE FIELD EXPERIENCE METHOD IS USED, SUBMIT COMPLETE STANDARD DEVIATION ANALYSIS.

B. FLY ASH TESTING: SUBMIT CERTIFICATE VERIFYING CONFORMANCE WITH ASTM 618 INITIALLY WITH MIX DESIGN AND FOR EACH TRUCK LOAD OF FLY ASH DELIVERED FROM SOURCE. SUBMIT TEST RESULTS PERFORMED WITHIN 6 MONTHS OF SUBMITTAL DATE. NOTIFY RESIDENT ENGINEER IMMEDIATELY WHEN CHANGE IN SOURCE IS ANTICIPATED.
1. TESTING LABORATORY USED FOR FLY ASH CERTIFICATION/TESTING SHALL PARTICIPATE IN THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) PROGRAM. SUBMIT MOST RECENT CCRL INSPECTION REPORT.

C. GROUND-GRANULATED BLAST FURNACE SLAG TESTING: SUBMIT CERTIFICATE VERIFYING CONFORMANCE WITH ASTM C989 GRADE 100 OR 120 INITIALLY WITH MIX DESIGN AND FOR EACH TRUCK LOAD OF GROUND-GRANULATED BLAST-FURNACE SLAG DELIVERED FROM SOURCE. SUBMIT TEST RESULTS PERFORMED WITHIN 6 MONTHS OF SUBMITTAL DATE. NOTIFY RESIDENT ENGINEER IMMEDIATELY WHEN CHANGE IN SOURCE IS ANTICIPATED.
1. TESTING LABORATORY USED FOR GROUND-GRANULATED BLAST-FURNACE SLAG CERTIFICATION/TESTING SHALL PARTICIPATE IN THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) PROGRAM. SUBMIT MOST RECENT CCRL INSPECTION REPORT.

D. AFTER APPROVAL OF MIXES NO SUBSTITUTION IN MATERIAL OR CHANGE IN PROPORTIONS OF APPROVAL MIXES MAY BE MADE WITHOUT ADDITIONAL TESTS AND APPROVAL OF RESIDENT ENGINEER OR AS SPECIFIED. MAKING AND TESTING OF PRELIMINARY TEST CYLINDERS MAY BE CARRIED ON PENDING APPROVAL OF CEMENT, FLY ASH AND GROUND-GRANULATED BLAST-FURNACE SLAG, PROVIDING CONTRACTOR AND MANUFACTURER CERTIFY THAT INGREDIENTS USED IN MAKING TEST CYLINDERS ARE THE SAME. RESIDENT ENGINEER MAY ALLOW CONTRACTOR TO PROCEED WITH DEPOSITING CONCRETE FOR CERTAIN PORTIONS OF WORK, PENDING FINAL APPROVAL OF CEMENT, FLY ASH AND GROUND-GRANULATED BLAST-FURNACE SLAG AND APPROVAL OF DESIGN MIX.

E. ADMIXTURES: WHERE ADMIXTURES ARE USED THEY SHALL BE ADDED AS RECOMMENDED IN ACI 211.1 FOR NORMAL WEIGHT CONCRETE AND AT RATES RECOMMENDED BY MANUFACTURER. ADMIXTURES ARE SUBJECT TO ENGINEER'S REVIEW.

F. NORMAL WEIGHT CONCRETE MIX REQUIREMENTS:
1. SHALL BE MADE WITH AGGREGATES FOR HARD ROCK CONCRETE.
2. MINIMUM COMPRESSIVE STRENGTH, F'C, WHEN TESTED IN ACCORDANCE WITH ASTM C39 AT 28 DAYS SHALL BE 25 MPA (3000 PSI). IF TRIAL MIXES ARE USED, THE PROPOSED MIX DESIGN SHALL ACHIEVE A COMPRESSIVE STRENGTH 8.3 MPA (1200 PSI) IN EXCESS OF F'C.
3. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 1" FOR FOUNDATIONS AND CONCRETE SLAB ON GRADE.
4. MINIMUM CEMENTITIOUS MATERIAL CONTENT SHALL BE 300 KG/M3 (500 LBS/CY) FOR NON AIR ENTRAINED AND 310 KG/M3 (520 LBS/CY) FOR AIR ENTRAINED CONCRETE.
5. MAXIMUM WATER/CEMENTITIOUS MATERIAL RATIO SHALL BE .55. FOR CONCRETE EXPOSED TO HIGH SULFATE CONTENT SOILS MAXIMUM WATER CEMENT RATIO IS 0.44.
6. MAXIMUM SLUMP AT POINT OF DISCHARGE SHALL BE 100 MM (4 INCHES). SLUMP MAY BE INCREASED BY THE USE OF THE APPROVED HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPERPLASTICIZER). TOLERANCES AS ESTABLISHED BY ASTM C94. CONCRETE CONTAINING THE HIGH-RANGE WATER-REDUCING ADMIXTURE MAY HAVE A MAXIMUM SLUMP OF 225 MM (9 INCHES). THE CONCRETE SHALL ARRIVE AT THE JOB SITE AT A SLUMP OF 50 MM TO 75 MM (2 INCHES TO 3 INCHES). THIS SHOULD BE VERIFIED, AND THEN THE HIGH-RANGE WATER-REDUCING ADMIXTURE ADDED TO INCREASE THE SLUMP TO THE APPROVED LEVEL.
7. CONCRETE FLOOR SLAB AND CONCRETE FILL OVER METAL DECK SHALL BE AIR-ENTRAINED. AIR-ENTRAINMENT OF CONCRETE FLOOR SLABS SHALL BE 3.5 TO 6.5 PERCENT BY VOLUME. DETERMINE AIR CONTENT BY EITHER ASTM C173 OR ASTM C231.

G. STRUCTURAL LIGHTWEIGHT CONCRETE MIX REQUIREMENTS
1. SHALL BE MADE WITH LIGHTWEIGHT AGGREGATES CONFORMING TO ASTM C330.
2. MINIMUM COMPRESSIVE STRENGTH, F'C, WHEN TESTED IN ACCORDANCE WITH ASTM C330 AT 28 DAYS SHALL BE 25 MPA (3000 PSI). IF TRIAL MIXES ARE USED, THE PROPOSED MIX DESIGN SHALL ACHIEVE A COMPRESSIVE STRENGTH 8.3 MPA (1200 PSI) IN EXCESS OF F'C.
3. MINIMUM CEMENTITIOUS MATERIAL CONTENT: SAME AS NORMAL WEIGHT CONCRETE.
4. MAXIMUM WATER-CEMENT RATIO SHALL BE .55. SIGNIFICANT VOLUME OF LIQUID ADMIXTURES SHOULD BE CONSIDERED AS PART OF THE MIXING WATER.
5. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE NOT GREATER THAN ¾" FOR CONCRETE FILL ON METAL DECK.
6. MAXIMUM DRY UNIT WEIGHT SHALL BE 1920 KG/M3 (120 LB PER CUBIC FOOT) AS DETERMINED BY ASTM C567.
7. MAXIMUM SLUMP AT POINT OF DISCHARGE SHALL BE 100 MM (4 INCHES). SLUMP MAY BE INCREASED BY THE USE OF THE APPROVED HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPERPLASTICIZER). TOLERANCES AS ESTABLISHED BY ASTM C94. CONCRETE CONTAINING THE HIGH-RANGE WATER-REDUCING ADMIXTURE MAY HAVE A MAXIMUM SLUMP OF 225MM (9 INCHES). THE CONCRETE SHALL ARRIVE AT THE JOB SITE AT A SLUMP OF 50 MM TO 75 MM (2 INCHES TO 3 INCHES). THIS SHOULD BE VERIFIED, AND THEN THE HIGH-RANGE WATER-REDUCING ADMIXTURE ADDED TO INCREASE THE SLUMP TO THE APPROVED LEVEL.
8. CONCRETE FILL OVER METAL DECK SHALL BE AIR-ENTRAINED. AIR-ENTRAINMENT OF CONCRETE OVER METAL DECK SHALL BE 4.0 TO 5.5 PERCENT BY VOLUME. DETERMINE AIR CONTENT BY EITHER ASTM C173 OR ASTM C231

H. ENFORCING STRENGTH REQUIREMENTS: TEST AS SPECIFIED IN SECTION 01 45 29, TESTING LABORATORY SERVICES, DURING THE PROGRESS OF THE WORK. SEVEN-DAY TESTS MAY BE USED AS INDICATORS OF 28-DAY STRENGTH. AVERAGE OF ANY THREE 28-DAY CONSECUTIVE STRENGTH TESTS OF LABORATORY-CURED SPECIMENS REPRESENTING EACH TYPE OF CONCRETE SHALL BE EQUAL TO OR GREATER THAN SPECIFIED STRENGTH. NO SINGLE TEST SHALL BE MORE THAN 3.5 MPA (500 PSI) BELOW SPECIFIED STRENGTH. INTERPRET FIELD TEST RESULTS IN ACCORDANCE WITH ACI 214. SHOULD STRENGTHS SHOWN BY TEST SPECIMENS FALL BELOW REQUIRED VALUES, RESIDENT ENGINEER MAY REQUIRE ANY ONE OR ANY COMBINATION OF THE FOLLOWING CORRECTIVE ACTIONS, AT NO ADDITIONAL COST TO THE GOVERNMENT:
1. REQUIRE CHANGES IN MIX PROPORTIONS BY SELECTING ONE OF THE OTHER APPROPRIATE TRIAL MIXES OR CHANGING PROPORTIONS, INCLUDING CEMENT CONTENT, OF APPROVED TRIAL MIX.
2. REQUIRE ADDITIONAL CURING AND PROTECTION.
3. IF FIVE CONSECUTIVE TESTS FALL BELOW 95 PERCENT OF MINIMUM VALUES GIVEN FOR THE CONCRETE OR IF TEST RESULTS ARE SO LOW AS TO RAISE A QUESTION AS TO THE SAFETY OF THE STRUCTURE, RESIDENT ENGINEER MAY DIRECT CONTRACTOR TO TAKE CORES FROM PORTIONS OF THE STRUCTURE. USE RESULTS FROM CORES TESTED BY THE CONTRACTOR RETAINED TESTING AGENCY TO ANALYZE STRUCTURE.
4. IF STRENGTH OF CORE DRILLED SPECIMENS FALLS BELOW 85 PERCENT OF MINIMUM VALUE GIVEN IN FOR THE CONCRETE, RESIDENT ENGINEER MAY ORDER LOAD TESTS, MADE BY CONTRACTOR RETAINED TESTING AGENCY, ON PORTIONS OF BUILDING SO AFFECTED. LOAD TESTS IN ACCORDANCE WITH ACI 318 AND CRITERIA OF ACCEPTABILITY OF CONCRETE UNDER TEST AS GIVEN THEREIN.
5. CONCRETE WORK, JUDGED INADEQUATE BY STRUCTURAL ANALYSIS, BY RESULTS OF LOAD TEST, OR FOR ANY REASON, SHALL BE REINFORCED WITH ADDITIONAL CONSTRUCTION OR REPLACED, IF DIRECTED BY THE RESIDENT ENGINEER.

2.4 BATCHING AND MIXING:

A. GENERAL: CONCRETE SHALL BE "READY-MIXED" AND COMPLY WITH ACI 318 AND ASTM C94, EXCEPT AS SPECIFIED. BATCH MIXING AT THE SITE IS NOT PERMITTED. MIXING PROCESS AND EQUIPMENT MUST BE APPROVED BY RESIDENT ENGINEER. WITH EACH BATCH OF CONCRETE, FURNISH CERTIFIED DELIVERY TICKETS LISTING INFORMATION IN PARAGRAPH 16.1 AND 16.2 OF ASTM C94. MAXIMUM DELIVERY TEMPERATURE OF CONCRETE IS 380C (100 DEGREES FAHRENHEIT). MINIMUM DELIVERY TEMPERATURE AS FOLLOWS:

ATMOSPHERIC TEMPERATUREMINIMUM CONCRETE TEMPERATURE
-1. DEGREES TO 4.4 DEGREES C (30 DEGREES TO 40 DEGREES F)15.6 DEGREES C (60 DEGREES F.)
-17 DEGREES C TO -1.1 DEGREES C (0 DEGREES TO 30 DEGREES F.)21 DEGREES C (70 DEGREES F.)

END OF SECTION 03 30 00

SECTION 05 12 00
STRUCTURAL STEEL FRAMING

PART 2 – PRODUCTS

2.1 MATERIALS:

A. STEEL ANGLES AND CHANNELS: ASTM A36

B. STEEL W SHAPES AND WT TEES: ASTM A992

C. STEEL M SHAPE, S SHAPE, MT TEES AND ST TEES: ASTM A36

D. STEEL HP SHAPE: ASTM A572, GRADE 50

E. STEEL PLATES, AND BARS: ASTM A36 UNLESS NOTED OTHERWISE

F. STEEL PLATES, AND BARS: ASTM A572, GRADE 50 WHERE SHOWN ON THE STRUCTURAL DRAWINGS

G. STRUCTURAL TUBING: ASTM A500, GRADE B.

H. STEEL PIPE: ASTM A53, TYPE E OR S, GRADE B WITH SULFUR NOT EXCEEDING 0.05%, STD.

I. SHEAR STUD CONNECTORS: ASTM A108, TYPE B.

J. MACHINE BOLTS AND NUTS: HEAVY HEX, CARBON STEEL, ASTM A307, MANUFACTURED TO AMERICAN STANDARD BOLT AND NUT DIMENSIONS WITH "FREE FIT – CLASS 2" THREADS WITH MATCHING FINISH ASTM A563 NUTS. ALL UNFINISHED BOLTS SHALL HAVE AN APPROVED LOCK WASHER UNDER NUT.

K. THREADED ROD AND NUTS: CARBON STEEL, ASTM A36, MANUFACTURED TO AMERICAN STANDARD BOLT AND NUT DIMENSIONS WITH "FREE FIT – CLASS 2" THREADS. ALL UNFINISHED BOLTS SHALL HAVE AN APPROVED LOCK WASHER UNDER NUT. RODS EMBEDDED IN CONCRETE, GROUT OR ADHESIVE SHALL BE GALVANIZED OR NON-LUBRICATED UNLESS NOTED OTHERWISE.

L. SMOOTH RODS: SMOOTH RODS SHALL CONFORM TO ASTM A36.

M. ANCHOR RODS AND NUTS: ASTM F1554 GRADE 36 CLASS 2A WITH MATCHING FINISH ASTM A563 NUTS. RODS EMBEDDED IN CONCRETE, GROUT OR ADHESIVE SHALL BE GALVANIZED OR NON-LUBRICATED UNLESS NOTED OTHERWISE. EMBEDDED RODS WITHOUT A HEAD, NUT OR HOOK FOR ANCHORAGE SHALL BE THREADED FULL LENGTH.

N. HIGH STRENGTH ANCHOR RODS AND NUTS: ASTM F1554 GRADE 105 CLASS 2A WITH MATCHING FINISH ASTM A563 NUTS. RODS EMBEDDED IN CONCRETE, GROUT OR ADHESIVE SHALL BE GALVANIZED OR NON-LUBRICATED UNLESS NOTED OTHERWISE. EMBEDDED RODS WITHOUT A HEAD, NUT OR HOOK FOR ANCHORAGE SHALL BE THREADED FULL LENGTH.

O. HIGH STRENGTH STRUCTURAL BOLTS AND NUTS:
1. CONVENTIONAL BOLTS: ASTM A325 TYPE 1
2. TWIST-OFF-TYPE TENSION-CONTROL BOLT ASSEMBLY: ASTM F1852. THE USE OF THESE DEVICES MUST CONFORM TO THE REQUIREMENTS IN THE RCSC SPECIFICATION.
3. COMPRESSIBLE-WASHER-TYPE DIRECT-TENSION INDICATOR: ASTM F959. THE USE OF THESE DEVICES MUST CONFORM TO THE REQUIREMENTS IN THE RCSC SPECIFICATION.
4. NUTS: ASTM A563. FINISH SHALL MATCH FASTENER.

P. WASHERS SHALL BE FLAT CIRCULAR, RECTANGULAR OR SQUARE BEVELED WASHERS AND SHALL CONFORM TO ASTM F436 TYPE 1 FOR HIGH STRENGTH BOLTS/RODS AND ASTM F844 FOR OTHER BOLTS/RODS. WASHER FINISH SHALL MATCH NUT. WASHERS SHALL BE INSTALLED UNDER THE ELEMENT BEING TURNED FOR A325 BOLTS. WASHERS OVER OVERSIZED OR SLOTTED HOLES SHALL ALSO COMPLY WITH RCSC SPECIFICATION SECTION 6.

Q. RAISED PATTERN FLOOR PLATES: ASTM A786 COMMERCIAL GRADE.

R. FORGED STEEL STRUCTURAL HARDWARE:
1. CLEVISES AND TURNBUCKLES SHALL CONFORM TO AISI C1035.
2. EYE NUTS AND EYE BOLTS SHALL CONFORM TO AISI C1030.
3. SLEEVE NUTS SHALL CONFORM TO AISI C1018 GRADE 2.

S. WELDING FILLER METAL: ARC-WELDING ELECTRODES SHALL BE E70 SERIES ELECTRODES FOR A36, A572 AND A992 MATERIAL. ELECTRODES SHALL BE AS RECOMMENDED BY THEIR MANUFACTURERS FOR THE POSITIONS AND CONDITIONS OF ACTUAL USE.
1. WELD METAL TOUGHNESS SHALL BE REPORTED ON THE FILLER METAL MANUFACTURER'S CERTIFICATE OF COMPLIANCE. ALL FILLER METAL SHALL BE CAPABLE OF WELDS WITH A MINIMUM CVN VALUE OF 20 FT-LBS AT 00 F. EXCEPTIONS: METAL DECK WELDING, STAIR AND HANDRAIL WELDING AND LIGHT GAGE STEEL WELDING.
2. DEMAND CRITICAL WELDS (DCW) SHALL USE FILLER METAL WITH A MINIMUM CVN VALUE OF 20 FT-LBS AT -200 F AND 40 FT-LBS AT 700 F.

T. ZINC COATING: ASTM A123.

U. GALVANIZING REPAIR PAINT: MIL. SPEC. MIL-P-21035.

V. PAINT SYSTEM: PRIMER SHALL BE COMPATIBLE WITH THE FINISH PAINT SYSTEM SPECIFIED BY ARCHITECT. PREPARE SURFACES AND APPLY COATINGS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.

END OF SECTION 05 12 00

SECTION 05 31 00
STEEL DECKING

PART 2 – PRODUCTS

2.1 MATERIALS:

A. STEEL DECK
1. ROOF DECK: NON-COMPOSITE TYPE, FLUTED STEEL SHEET:
a. GALVANIZED STEEL SHEET: ASTM A653, STRUCTURAL STEEL (SS) GRADE 33, WITH G60 OR G90 GALVANIZED COATING AS SHOWN ON THE PLANS.
b. STRUCTURAL PROPERTIES: THE DECK TYPE (PROFILE) AND THICKNESS (GAGE) SHALL BE AS SHOWN ON THE PLANS.

B. TOLERANCE:
1. UNCOATED THICKNESS SHALL NOT BE LESS THAN 95% OF THE DESIGN THICKNESS AS LISTED IN THE FOLLOWING TABLE:

GAGE NO.	DESIGN THICKNESS (IN)	MINIMUM THICKNESS (IN)
28	0.0149	0.014
26	0.0179	0.017
24	0.0238	0.023
22	0.0295	0.028
20	0.0358	0.034
18	0.0474	0.045
16	0.0598	0.057

2. PANEL LENGTH SHALL BE WITHIN PLUS OR MINUS ½" OF SPECIFIED LENGTH.
3. PANEL COVER WIDTH SHALL BE NO GREATER THAN MINUS 3/8" PLUS 3/4".
4. PANEL CAMBER AND/OR SWEEP SHALL BE NO GREATER THAN ¼" IN 10' LENGTH.
5. PANEL END OUT OF SQUARE SHALL NOT BE GREATER THAN 1/8" PER FOOT OF PANEL WIDTH.

C. GALVANIZING REPAIR PAINT: MIL. SPEC. MIL-P-21035B.

D. PRIMER FOR SHOP PAINTED SHEETS: MANUFACTURER'S STANDARD PRIMER (2 COATS). WHEN FINISH PAINTING OF STEEL DECKING IS SPECIFIED IN SECTION 09 91 00, PAINTING PRIMER COATING SHALL BE COMPATIBLE WITH SPECIFIED FINISH PAINTING.

E. MISCELLANEOUS STEEL SHAPES: ASTM A36.

F. WELDING ELECTRODE: E60XX MINIMUM.

G. SHEET METAL ACCESSORIES: ASTM A653, GALVANIZED, UNLESS NOTED OTHERWISE. PROVIDE ACCESSORIES OF EVERY KIND REQUIRED TO COMPLETE THE INSTALLATION OF METAL DECKING IN THE SYSTEM SHOWN. FINISH SHEET METAL ITEMS TO MATCH DECK INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING ITEMS:
1. METAL COVER PLATES: FOR END-ABUTTING DECK UNITS, TO CLOSE GAPS AT CHANGES IN DECK DIRECTION, COLUMNS, WALLS AND OPENINGS. SAME QUALITY AS DECK UNITS BUT NOT LESS THAN 1.3 MM (18 GAUGE) SHEET STEEL.
2. CONTINUOUS SHEET METAL EDGING: AT OPENINGS, AND ROOF DECK EDGES. SAME QUALITY AS DECK UNITS BUT NOT LESS THAN 1.3 MM (18 GAUGE) STEEL. THE DEFLECTION OF CANTILEVER CLOSURES SHALL BE LIMITED TO 3 MM (1/8 INCH) MAXIMUM.
3. METAL CLOSURE STRIPS: FOR OPENINGS BETWEEN DECKING AND OTHER CONSTRUCTION, OF NOT LESS THAN 1.3 MM (18 GAUGE) SHEET STEEL OF THE SAME QUALITY AS THE DECK UNITS. FORM TO THE CONFIGURATION REQUIRED TO PROVIDE TIGHT-FITTING CLOSURES AT OPEN ENDS OF FLUTES AND SIDES OF DECKING.
4. RIDGE AND VALLEY PLATES: PROVIDE 1.3 MM (18 GAUGE), MINIMUM 100 MM (4 INCH) WIDE RIDGE AND VALLEY PLATES WHERE ROOF SLOPE EXCEEDS 40 MM PER METER (1/2 INCH PER FOOT).
5. CANT STRIPS: PROVIDE BENT METAL 45 DEGREE LEG CANT STRIPS WHERE INDICATED ON THE DRAWINGS. FABRICATE CANT STRIPS FROM 1 MM (20 GAUGE) METAL WITH A MINIMUM 125 MM (5 INCH) FACE WIDTH.
6. SEAT ANGLES FOR DECK: PROVIDE WHERE A BEAM DOES NOT FRAME INTO A COLUMN.
7. SUMP PANS FOR ROOF DRAINS: FABRICATED FROM SINGLE PIECE OF MINIMUM 1.9 MM (14 GAUGE) GALVANIZED SHEET STEEL WITH LEVEL BOTTOMS AND SLOPING SIDES TO DIRECT WATER FLOW TO DRAIN, UNLESS OTHERWISE SHOWN. PROVIDE SUMP PANS OF ADEQUATE SIZE TO RECEIVE ROOF DRAINS AND WITH BEARING FLANGES NOT LESS THAN 75 MM (3 INCHES) WIDE. RECESS PANS NOT LESS THAN 38 MM (1 1/2 INCHES) BELOW ROOF DECK SURFACE, UNLESS OTHERWISE SHOWN OR REQUIRED BY DECK CONFIGURATION. HOLES FOR DRAINS WILL BE CUT IN THE FIELD.

2.2 REQUIREMENTS:

A. DO NOT USE STEEL DECK FOR HANGING SUPPORTS FOR ANY TYPE OR KIND OF BUILDING COMPONENTS INCLUDING SUSPENDED CEILINGS, ELECTRICAL LIGHT FIXTURES, PLUMBING, HEATING, OR AIR CONDITIONING PIPES OR DUCTS OR ELECTRICAL CONDUITS.

B. STEEL DECKING UNITS USED FOR INTERSTITIAL LEVELS SHALL INCLUDE AN INTEGRAL SYSTEM.
1. SYSTEM TO PROVIDE A SIMPLE POINT OF ATTACHMENT FOR LIGHT DUTY HANGER DEVICES.
2. SYSTEM TO ALLOW FOR FLEXIBILITY FOR ATTACHING HANGERS FOR SUPPORT OF SUSPENDED CEILINGS, ELECTRICAL, PLUMBING, HEATING, OR AIR CONDITIONING ITEMS, WEIGHT NOT TO EXCEED 50 KG/M2 (10 PSF).
3. SYSTEM SHALL PROVIDE FOR A MINIMUM SPACING PATTERN OF 300 MM (12 INCHES) ON CENTERS LONGITUDINALLY AND 600 MM (24 INCHES) ON CENTERS TRANSVERSELY.
4. MAXIMUM LOAD SUSPENDED FROM ANY HANGER IS 23 KG (50 POUNDS).
5. SYSTEM CONSISTING OF FOLD-DOWN TYPE HANGER TABS OR LIP HANGER IS ACCEPTABLE.

END OF SECTION 05 31 00

SECTION 05 36 00
COMPOSITE METAL DECKINg

PART 2 – PRODUCTS

2.1 MATERIALS:

A. STEEL DECKING AND ALL FLASHINGS: ASTM A653, STRUCTURAL QUALITY SUITABLE FOR SHEAR STUD WELD-THROUGH TECHNIQUES.

B. GALVANIZING: ASTM A653, G60.

C. GALVANIZING REPAIR PAINT: MIL. SPEC. MIL-P-21035B.

D. MISCELLANEOUS STEEL SHAPES: ASTM A36.

E. WELDING ELECTRODE: E60XX MINIMUM.

F. SHEET METAL ACCESSORIES: ASTM A653, GALVANIZED, UNLESS NOTED OTHERWISE. PROVIDE ACCESSORIES OF EVERY KIND REQUIRED TO COMPLETE THE INSTALLATION OF METAL DECKING IN THE SYSTEM SHOWN. FINISH SHEET METAL ITEMS TO MATCH DECK INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING ITEMS:
1. METAL COVER PLATES: FOR END-ABUTTING DECK UNITS, TO CLOSE GAPS AT CHANGES IN DECK DIRECTION, COLUMNS, WALLS AND OPENINGS. SAME QUALITY AS DECK UNITS BUT NOT LESS THAN 1.3 MM (18 GAUGE) SHEET STEEL.
2. CONTINUOUS SHEET METAL EDGING: AT OPENINGS AND CONCRETE SLAB EDGES. SAME QUALITY AS DECK UNITS BUT NOT LESS THAN 1.3 MM (18 GAUGE) STEEL. SIDE AND END CLOSURES SUPPORTING CONCRETE AND THEIR ATTACHMENT TO SUPPORTING STEEL SHALL BE DESIGNED BY THE MANUFACTURER TO SAFELY SUPPORT THE WET WEIGHT OF CONCRETE AND CONSTRUCTION LOADS. THE DEFLECTION OF CANTILEVER CLOSURES SHALL BE LIMITED TO 3 MM (1/8 INCH) MAXIMUM.
3. METAL CLOSURE STRIPS: FOR OPENINGS BETWEEN DECKING AND OTHER CONSTRUCTION, OF NOT LESS THAN 1.3 MM (18 GAUGE) SHEET STEEL OF THE SAME QUALITY AS THE DECK UNITS. FORM TO THE CONFIGURATION REQUIRED TO PROVIDE TIGHT-FITTING CLOSURES AT OPEN ENDS OF FLUTES AND SIDES OF DECKING.
4. SEAT ANGLES FOR DECK: WHERE A BEAM DOES NOT FRAME INTO A COLUMN.

2.2 REQUIREMENTS:

A. STEEL DECKING DEPTH, GAGE, AND SECTION PROPERTIES TO BE AS SHOWN. PROVIDE EDGES OF DECK WITH VERTICAL INTERLOCKING MALE AND FEMALE LIP PROVIDING FOR A POSITIVE MECHANICAL CONNECTION.

B. FABRICATE DECK UNITS WITH INTEGRAL EMBOSSMENTS TO PROVIDE MECHANICAL BOND WITH CONCRETE SLAB. IN COMBINATION WITH CONCRETE SLAB, CAPABLE OF SUPPORTING TOTAL DESIGN LOADS ON SPANS SHOWN.

C. STEEL DECKING CAPABLE OF SAFELY SUPPORTING TOTAL, NORMAL CONSTRUCTION SERVICE LOADS WITHOUT DAMAGE TO DECKING UNIT.

D. STEEL DECKING UNITS SHALL INCLUDE AN INTEGRAL SYSTEM WHICH PROVIDES A SIMPLE POINT OF ATTACHMENT FOR LIGHT DUTY HANGER DEVICES FOR FLEXIBILITY FOR ATTACHING HANGERS FOR SUPPORT OF ACOUSTICAL, LATHING, PLUMBING, HEATING, AIR CONDITIONING AND ELECTRICAL ITEMS. SYSTEM SHALL PROVIDE FOR MINIMUM SPACING PATTERN OF 300 MM (12 INCHES) ON CENTERS LONGITUDINALLY AND 600 MM OR 900 MM (24 OR 36 INCHES) ON CENTERS TRANSVERSELY. SUSPENSION SYSTEM SHALL BE CAPABLE OF SAFELY SUPPORTING A MAXIMUM ALLOWABLE LOAD OF 45 KG (100 POUNDS) CONCENTRATED AT ANY ONE HANGER ATTACHMENT POINT. SYSTEM MAY CONSIST OF FOLD-DOWN TYPE HANGER TABS OR A LIP HANGER.

END OF SECTION 05 36 00

REFER TO THE PROJECT SPECIFICATIONS FOR COMPLETE CONSTRUCTION SPECIFICATIONS. MATERIAL SPECIFICATIONS PROVIDED HERE ARE FOR REFERENCE ONLY.

Revisions:	Date
FINAL BID DOCUMENTS (14-251)	4/14/16
100% CONSTRUCTION DOCUMENTS (14-248)	1/22/16
100% DESIGN DEVELOPMENT (14-244)	10/23/15
50% DESIGN DEVELOPMENT (14-233)	8/21/15
100% SCHEMATIC DESIGN (14-185)	3/6/15

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Drawing Title: MATERIAL SPECIFICATIONS

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date: 4/14/16 | Checked: DLL | Drawn: JJD

Project Number: 612-400

Building Number: 642

Drawing Number: S001

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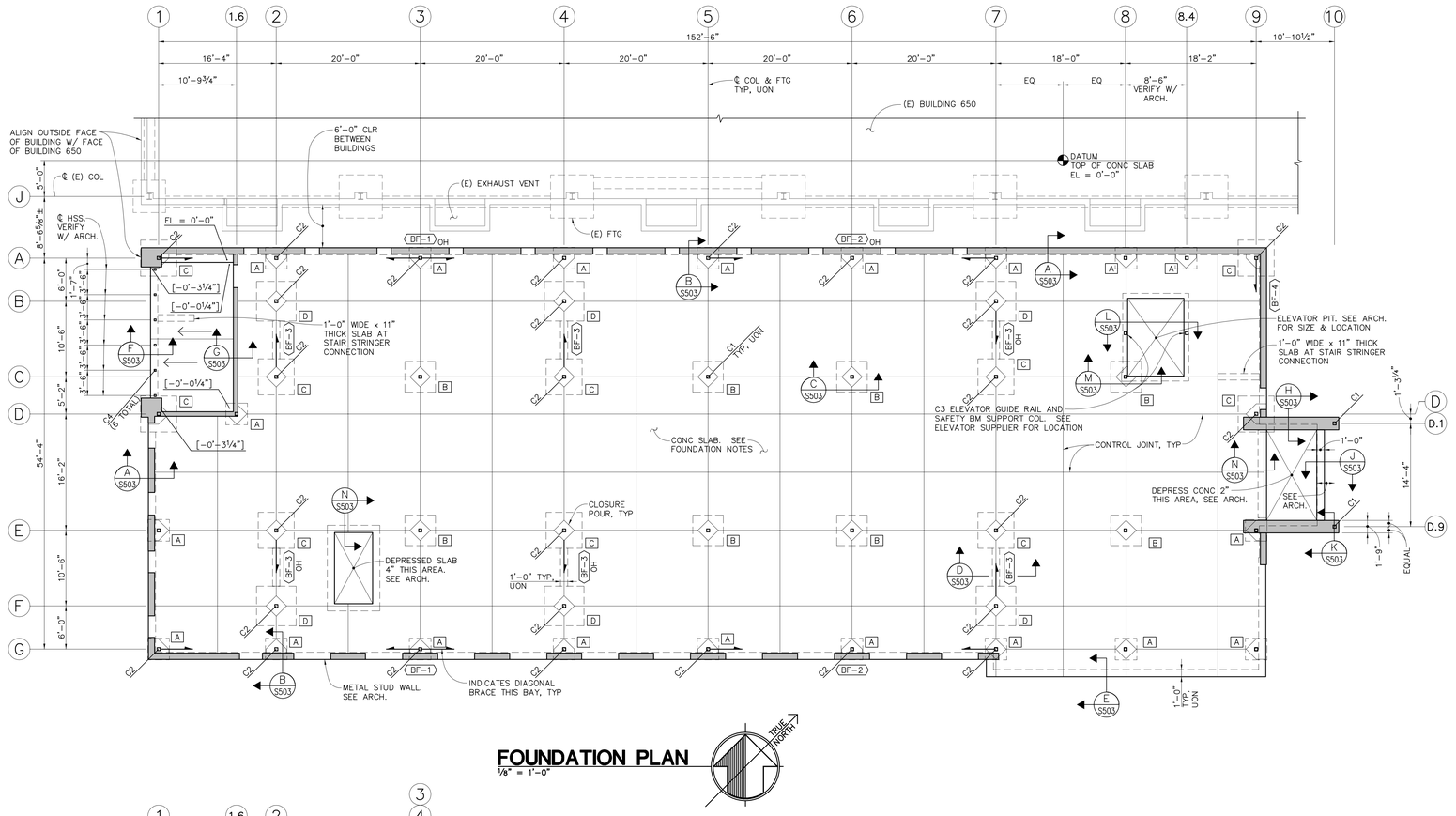
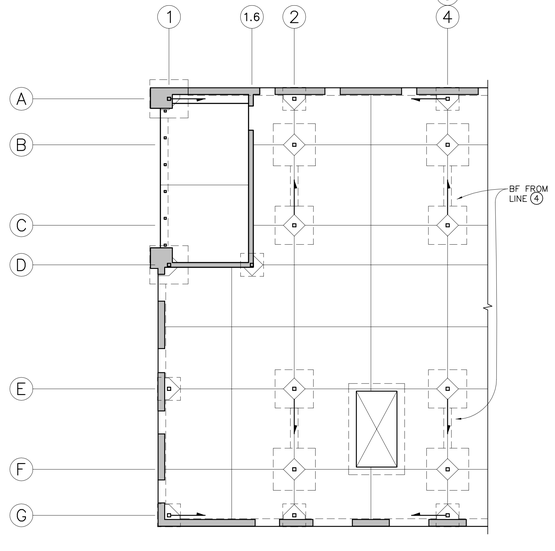
Office of Facilities Management

Department of Veterans Affairs



FOUNDATION PLAN

1/8" = 1'-0"



DEDUCT 6 FOUNDATION PLAN

1/8" = 1'-0"

FOUNDATION NOTES:

1. TOP OF SLAB ELEVATION = 0'-0" TYP, UON.
2. BUILDING SLAB SECTION TO BE AS FOLLOWS:
   - 5" THICK CONCRETE SLAB
   - #4 @ 18" OC EACH WAY AT 2" BELOW TOP OF SLAB. SUPPORT AT 3'-0" MAX EA WAY.
   - MEMBRANE PER SPECIFICATIONS
   - 6" OF ½"–¾" CRUSHED ROCK WITH LESS THAN 5% PASSING A No. 4 SIEVE. CONSOLIDATE IN PLACE
3. CONTROL JOINTS ARE TO BE INSTALLED AS SHOWN ON PLAN. CONTROL JOINTS SHALL BE MADE BY SAW CUTTING SLAB WITH THE SOFF-CUT SYSTEM OR APPROVED EQUAL AS SOON AS THE SURFACE IS FIRM ENOUGH SO THAT IT WILL NOT BE DAMAGED BY THE BLADE, USUALLY WITHIN 2 TO 4 HOURS AFTER FINAL FINISHING (NO LATER THAN 8 HOURS AFTER PLACEMENT). SAW CUT DEPTH SHALL BE ¼ OF THE SLAB DEPTH (1½" MAX). CONSTRUCTION JOINTS MAY BE INSTALLED AT THE CONTRACTOR'S OPTION. SEE "TYPICAL SLAB JOINTS" DETAIL FOR CONSTRUCTION JOINT & CONTROL JOINT.
4. PRIOR TO THE CONTRACTOR REQUESTING A FOUNDATION INSPECTION, THE SOILS ENGINEER SHALL ADVISE THE STRUCTURAL ENGINEER OF RECORD OF THE FOLLOWING IN WRITING:
   - THAT THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE SOILS REPORT.
   - THAT THE UTILITY TRENCHES HAVE BEEN PROPERLY BACKFILLED AND COMPACTED.
   - THAT THE FOUNDATION EXCAVATIONS COMPLY WITH THE SOILS REPORT AND THE APPROVED PLANS.
5. [A] INDICATES FOOTING TYPE. SEE FOOTING SCHEDULE.
6. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN WITH ARCHITECTURAL DRAWINGS AND INFORM BOTH ARCHITECT AND ENGINEER OF ANY CONFLICTING INFORMATION.
7. ANCHOR BOLTS SHALL NOT BE WET SET.
8. EXISTING FOOTING INFORMATION IS ASSUMED BASED ON PREVIOUS BUILDING DRAWINGS.
9. THE SIZE & LOCATION OF ALL FOOTING AND SLAB PENETERATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
10. SEE SHEET S501 FOR TYPICAL CONCRETE SECTIONS AND DETAILS.
11. (BF-1) INDICATES BRACED FRAME ELEVATION VIEWED FROM SYMBOL SIDE. SEE SHEET S506.
12. SEE ARCHITECT FOR FLOOR DRAIN LOCATIONS AND CONCRETE SLOPE.
13. INDICATES CONCRETE CURB, SEE ARCH.
14. [-0'-3¼"] INDICATES TOP OF CONCRETE SLAB.
15. CONTRACTOR TO PROVIDE 1'-6"x1'-6"x0'-11" THICK THICKENED SLAB AT STAIR SUPPORT COLUMNS AND STRINGER SUPPORTS. SEE STAIR MANUFACTURER FOR LOCATIONS.
16. SEE ARCHITECT FOR EDGE OF SLAB, CURB AND EDGE OF DEPRESSED SLAB LOCATIONS.

FOOTING SCHEDULE				
TYPE	SIZE	REINFORCING		REMARKS
		LONGITUDINAL	TRANSVERSE	
A	3'–0" x 3'–0"	3 – #5	3 – #5	1, 2, 3, 4
B	4'–3" x 4'–3"	4 – #5	4 – #5	1, 2, 3
C	5'–0" x 5'–0"	5 – #5	5 – #5	1, 2, 3, 4
D	5'–6" x 5'–6"	5 – #5	5 – #5	1, 3, 4

REMARKS:

1. RUN CONTINUOUS REINFORCING THROUGH IF APPLIES.
2. REINFORCING INDICATES BOTTOM MAT ONLY.
3. CENTER REINFORCING ON COLUMN OR COLUMN GROUP.
4. REINFORCING INDICATES TOP AND BOTTOM MAT AT BRACED FRAME LOCATIONS.

COLUMN SCHEDULE
TYPE	SIZE
C1	HSS 5x5x¼
C2	HSS 5x5x5/16
C3	HSS 5x5x½
C4	HSS 3x3x¼

Revisions:	Date
FINAL BID DOCUMENTS (14–251)	4/14/16
100% CONSTRUCTION DOCUMENTS (14–248)	1/22/16
100% DESIGN DEVELOPMENT (14–244)	10/23/15
50% DESIGN DEVELOPMENT (14–233)	8/21/15
100% SCHEMATIC DESIGN (14–185)	3/6/15

CONSULTANTS:

BIGGS CARDOSA ASSOCIATES INC
STRUCTURAL ENGINEERS

865 The Alameda
San Jose, California 95126
408–296–5515

BCA

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KEY PLAN

STAMP

REGISTERED PROFESSIONAL ENGINEER — MARK A CARDOSA — No. S2279 — Exp. 3/31/18 — STRUCTURAL — STATE OF CALIFORNIA

ARCHITECT/ENGINEERS:

ADVANCE DESIGN CONSULTANTS, INC.
998 PARK AVENUE SAN JOSE CALIFORNIA 95126
P: (408) 287-1881 F: (408)294-3186 www.adcengineers.com

PO# 14-308-39

Drawing Title: FOUNDATION PLAN

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date: 4/14/16 | Checked: DLL | Drawn: JJD

Project Number: 612-400

Building Number: 642

Drawing Number: SB101

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08–6231

(20142291SB101) 2014229

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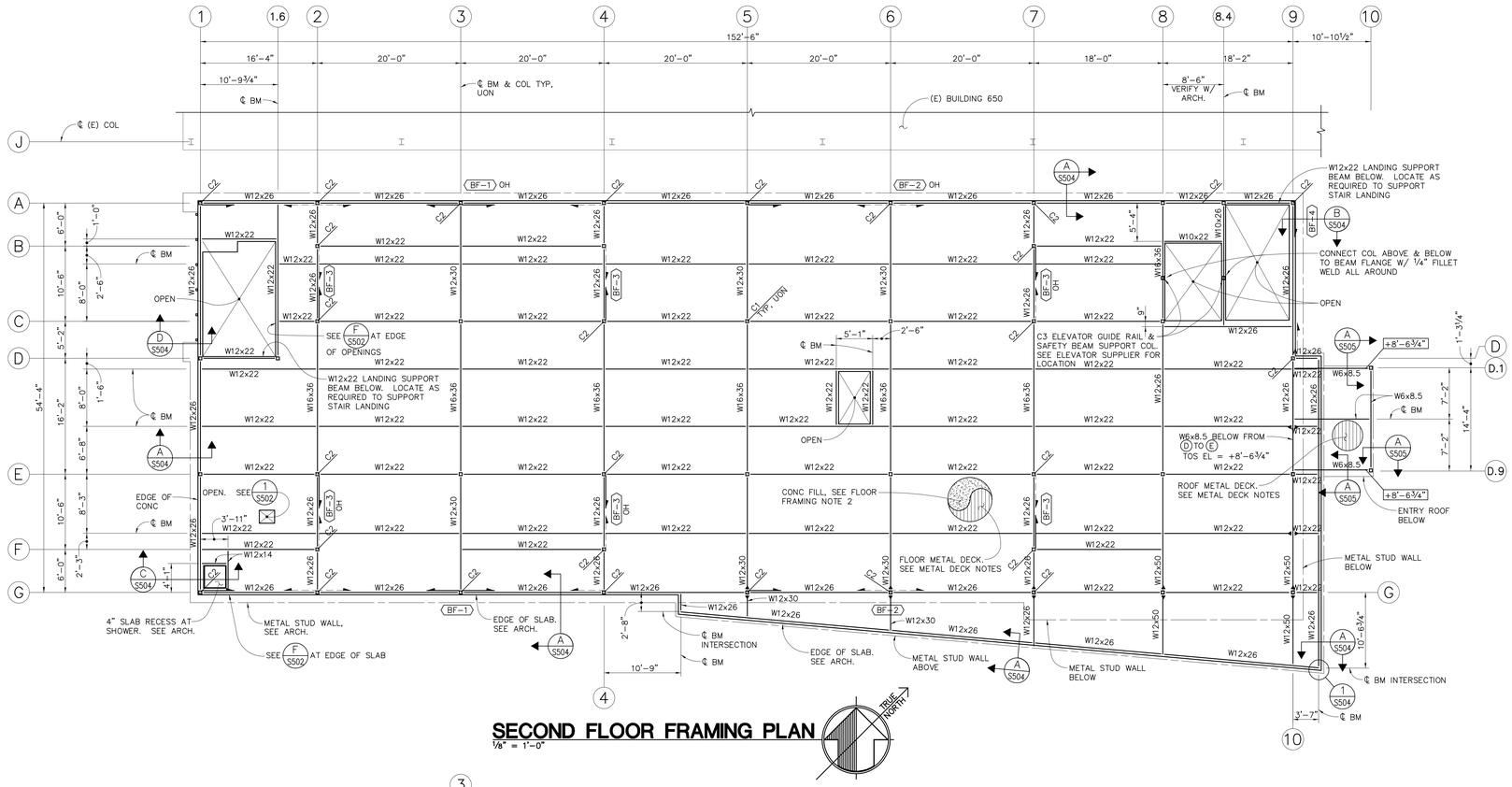
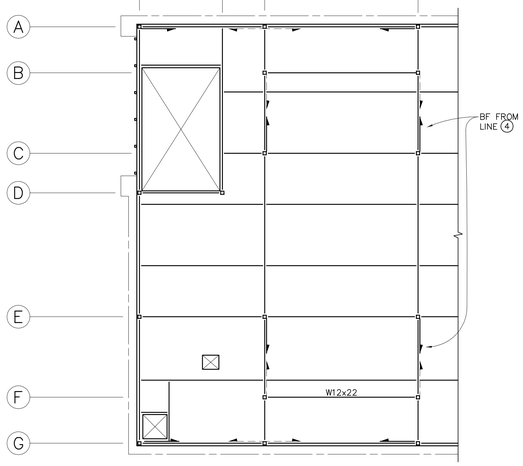


SECOND FLOOR FRAMING PLAN

1/8" = 1'-0"



DEDUCT 6
SECOND FLOOR FRAMING PLAN

1/8" = 1'-0"

FLOOR FRAMING NOTES:

1. TOP OF CONCRETE AT SECOND FLOOR EL = +14'-0" TYP, UON.
2. CONCRETE FILL TO BE 2½" NORMAL WEIGHT CONCRETE WITH 12x 12 x W2.9 x W2.9 AT CENTERLINE OF FILL.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN WITH ARCHITECTURAL DRAWINGS AND INFORM BOTH ARCHITECT AND ENGINEER OF ANY CONFLICTING INFORMATION.
4. SEE ARCH. DRAWINGS FOR SIZE & LOCATION OF DECK PENETRATIONS.
5. SEE S502 FOR TYPICAL STEEL SECTIONS & DETAILS.
6. NO MECH EQUIPMENT, DUCTWORK, PIPING, ETC SHALL BE HUNG FROM METAL DECKING UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
7. INDICATES BEAM TO COLUMN CONNECTION PER C S502, UON.
8. INDICATES BEAM TO COLUMN CONNECTION PER D S502, UON.
9. INDICATES BEAM TO BEAM CONNECTION PER E S502, UON
10. INDICATES BRACE FRAME BELOW.
11. INDICATES BRACE FRAME ABOVE.
12. BF-1 INDICATES BRACE FRAME ELEVATION SHOWN FROM SYMBOL SIDE. SEE S506.
13. SEE ARCH. FOR EDGE OF CONCRETE & VERIFY W/ BEAM LOCATIONS PRIOR TO CONSTRUCTION.
14. INDICATES TOP OF STEEL ELEVATION (BOTTOM OF METAL DECK)
15. INDICATES BEAM COLUMN CONNECTION PER G S502.

METAL DECK NOTES:

1. METAL DECK SHALL BE "VERCO" 2", 20 GAGE G60 GALVANIZED W2 FORMLOK, CONTINUOUS OVER 3 SPANS MINIMUM.
2. METAL DECK SHALL BE WELDED TO SUPPORTS AS FOLLOWS:
   a. TRANSVERSE SUPPORTS – 4 PUDDLE WELDS PER 36" SHEET.
   b. PARALLEL SUPPORTS – PUDDLE WELDS @ 1'-0" OC.
   c. SIDE SEAMS – BUTTON PUNCH @ 3'-0" OC, MAX.
   d. ALL PUDDLE WELDS TO HAVE ½" EFFECTIVE DIAMETER.
3. METAL DECK SHALL BEAR A MINIMUM OF 2" ON SUPPORTING MEMBERS.
4. DECK FLUTES TO RUN PERPENDICULAR TO SUPPORTING MEMBERS UNLESS SHOWN OTHERWISE.
5. DECK SHALL BE VENTED.

ROOF METAL DECK NOTES:

1. METAL DECK SHALL BE "VERCO" 1½", 22 GAGE G60 GALVANIZED B36 FORMLOK, CONTINUOUS OVER 3 SPANS MINIMUM.
2. METAL DECK SHALL BE WELDED TO SUPPORTS AS FOLLOWS:
   a. TRANSVERSE SUPPORTS – 4 PUDDLE WELDS PER 36" SHEET.
   b. PARALLEL SUPPORTS – PUDDLE WELDS @ 1'-0" OC.
   c. SIDE SEAMS – BUTTON PUNCH @ 2'-0" OC, MAX.
   d. ALL PUDDLE WELDS TO HAVE ½" EFFECTIVE DIAMETER.
   e. PUDDLE WELDS MAY BE ELIMINATED WHERE THEY COINCIDE WITH SHEAR STUDS.
3. METAL DECK SHALL BEAR A MINIMUM OF 2" ON SUPPORTING MEMBERS.
4. DECK FLUTES TO RUN PERPENDICULAR TO SUPPORTING MEMBERS UNLESS SHOWN OTHERWISE.

COLUMN SCHEDULE	
TYPE	SIZE
C1	HSS 5x5x¼
C2	HSS 5x5x5/16
C3	HSS 5x5x½

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CONSULTANTS:

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KEY PLAN

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REGISTERED PROFESSIONAL ENGINEER
MARK A CARDOSA
No. S2279
Exp. 3/31/18
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STATE OF CALIFORNIA

ARCHITECT/ENGINEERS:

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PO# 14-308-39

Drawing Title: SECOND FLOOR FRAMING PLAN

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date	Checked	Drawn
4/14/16	DLL	JJD

Project Number: 612-400

Building Number: 642

Drawing Number: SD101

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

(20142291SD101) 2014229

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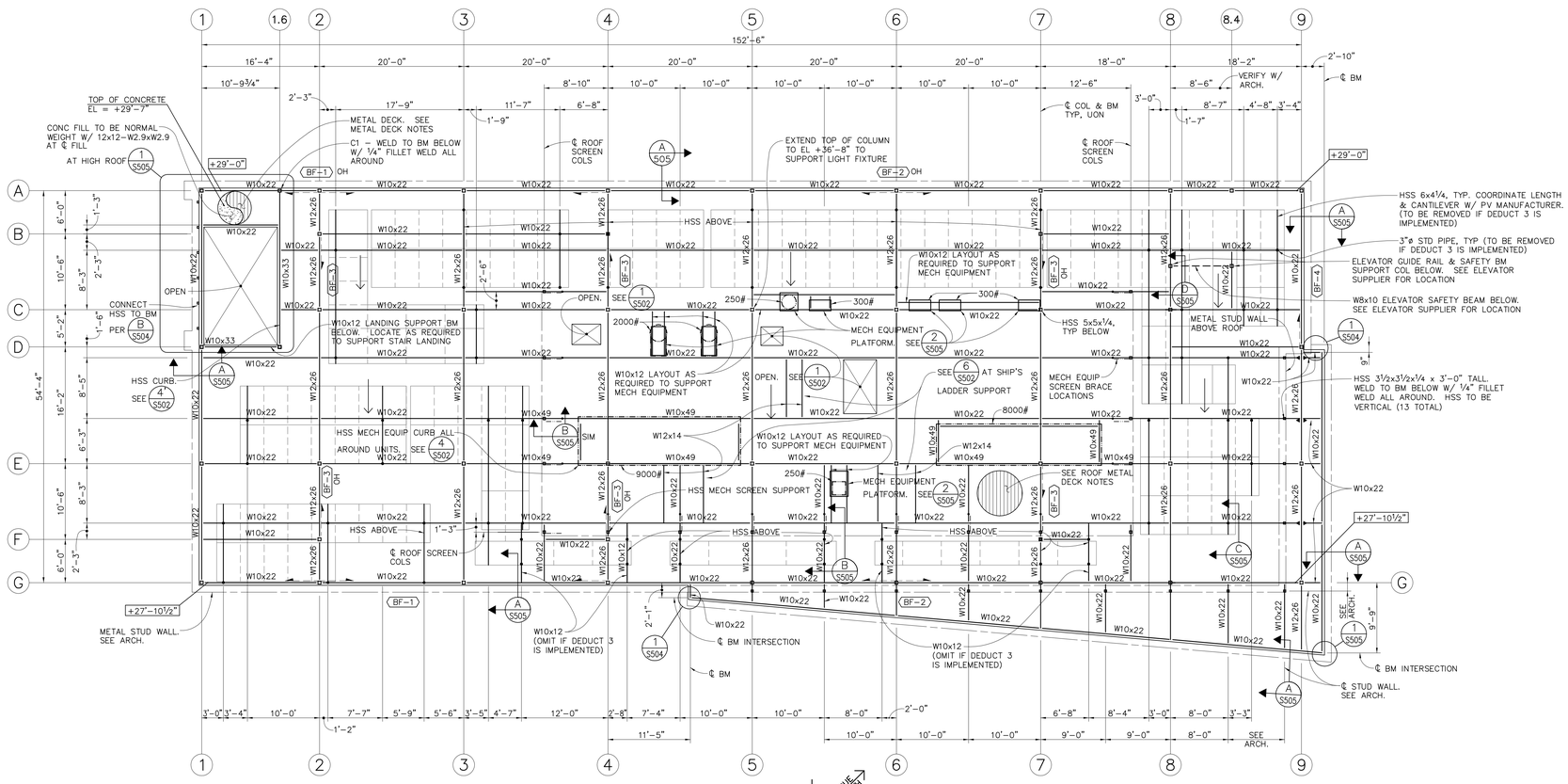
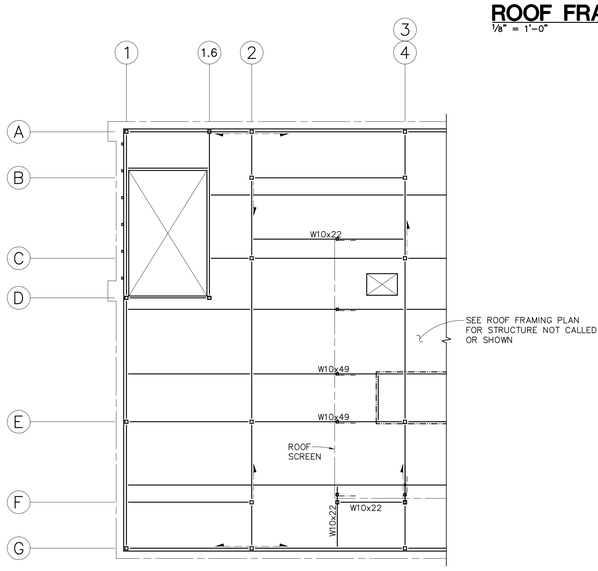


ROOF FRAMING PLAN
⅛" = 1'-0"



DEDUCT 6 ROOF FRAMING PLAN
⅛" = 1'-0"

ROOF FRAMING NOTES:

1. ⟵ INDICATES DIRECTION OF ROOF SLOPE.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN WITH ARCHITECTURAL DRAWINGS AND INFORM BOTH ARCHITECT AND ENGINEER OF ANY CONFLICTING INFORMATION.
3. +17'-7" INDICATES TOP OF STEEL ELEVATION (BOTTOM OF METAL DECK).
4. SEE ARCH. DRAWINGS FOR SIZE & LOCATION OF DECK PENETRATIONS.
5. SEE S502 FOR TYPICAL STEEL SECTIONS & DETAILS.
6. NO MECH EQUIPMENT, DUCTWORK, PIPING, ETC SHALL BE HUNG FROM METAL DECKING UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
7. —▫— INDICATES BEAM TO COLUMN CONNECTION PER (C S502), UON.
8. —▫— INDICATES BEAM TO COLUMN CONNECTION PER (D S502), UON.
9. —⊣⊢— INDICATES BEAM TO BEAM CONNECTION PER (E S502), UON.
10. - - - INDICATES BRACE BELOW
11. (BF-1) INDICATES BRACE FRAME ELEVATION SHOWN FROM SYMBOL SIDE. SEE S506.
12. SEE MEP DRAWINGS FOR PV LAYOUT.
13. SEE ARCH. FOR EDGE OF ROOF DECK LOCATIONS.

METAL DECK NOTES:

1. METAL DECK SHALL BE "VERCO" 2", 20 GAGE G60 GALVANIZED W2 FORMLOK, CONTINUOUS OVER 3 SPANS MINIMUM.
2. METAL DECK SHALL BE WELDED TO SUPPORTS AS FOLLOWS:
   a. TRANSVERSE SUPPORTS – 4 PUDDLE WELDS PER 36" SHEET.
   b. PARALLEL SUPPORTS – PUDDLE WELDS @ 1'-0" OC.
   c. SIDE SEAMS – BUTTON PUNCH @ 3'-0" OC, MAX.
   d. ALL PUDDLE WELDS TO HAVE ½" EFFECTIVE DIAMETER.
3. METAL DECK SHALL BEAR A MINIMUM OF 2" ON SUPPORTING MEMBERS.
4. DECK FLUTES TO RUN PERPENDICULAR TO SUPPORTING MEMBERS UNLESS SHOWN OTHERWISE.
5. DECK SHALL BE VENTED.

ROOF METAL DECK NOTES:

1. METAL DECK SHALL BE "VERCO" 1½", 22 GAGE G60 GALVANIZED B36 FORMLOK, CONTINUOUS OVER 3 SPANS MINIMUM.
2. METAL DECK SHALL BE WELDED TO SUPPORTS AS FOLLOWS:
   a. TRANSVERSE SUPPORTS – 4 PUDDLE WELDS PER 36" SHEET.
   b. PARALLEL SUPPORTS – PUDDLE WELDS @ 1'-0" OC.
   c. SIDE SEAMS – BUTTON PUNCH @ 2'-0" OC, MAX.
   d. ALL PUDDLE WELDS TO HAVE ½" EFFECTIVE DIAMETER.
   e. PUDDLE WELDS MAY BE ELIMINATED WHERE THEY COINCIDE WITH SHEAR STUDS.
3. METAL DECK SHALL BEAR A MINIMUM OF 2" ON SUPPORTING MEMBERS.
4. DECK FLUTES TO RUN PERPENDICULAR TO SUPPORTING MEMBERS UNLESS SHOWN OTHERWISE.

Revisions:	Date
FINAL BID DOCUMENTS (14–251)	4/14/16
100% CONSTRUCTION DOCUMENTS (14–248)	1/22/16
100% DESIGN DEVELOPMENT (14–244)	10/23/15
50% DESIGN DEVELOPMENT (14–233)	8/21/15
100% SCHEMATIC DESIGN (14–185)	3/6/15

CONSULTANTS:

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KEY PLAN

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REGISTERED PROFESSIONAL ENGINEER
MARK A CARDOSA
No. S2279
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ARCHITECT/ENGINEERS:

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ATTENTION:

PO# 14-308-39

Drawing Title: ROOF FRAMING PLAN

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date: 4/14/16 | Checked: DLL | Drawn: JJD

Project Number: 612-400

Building Number: 642

Drawing Number: SF101

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

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(20142291SF101) 2014229

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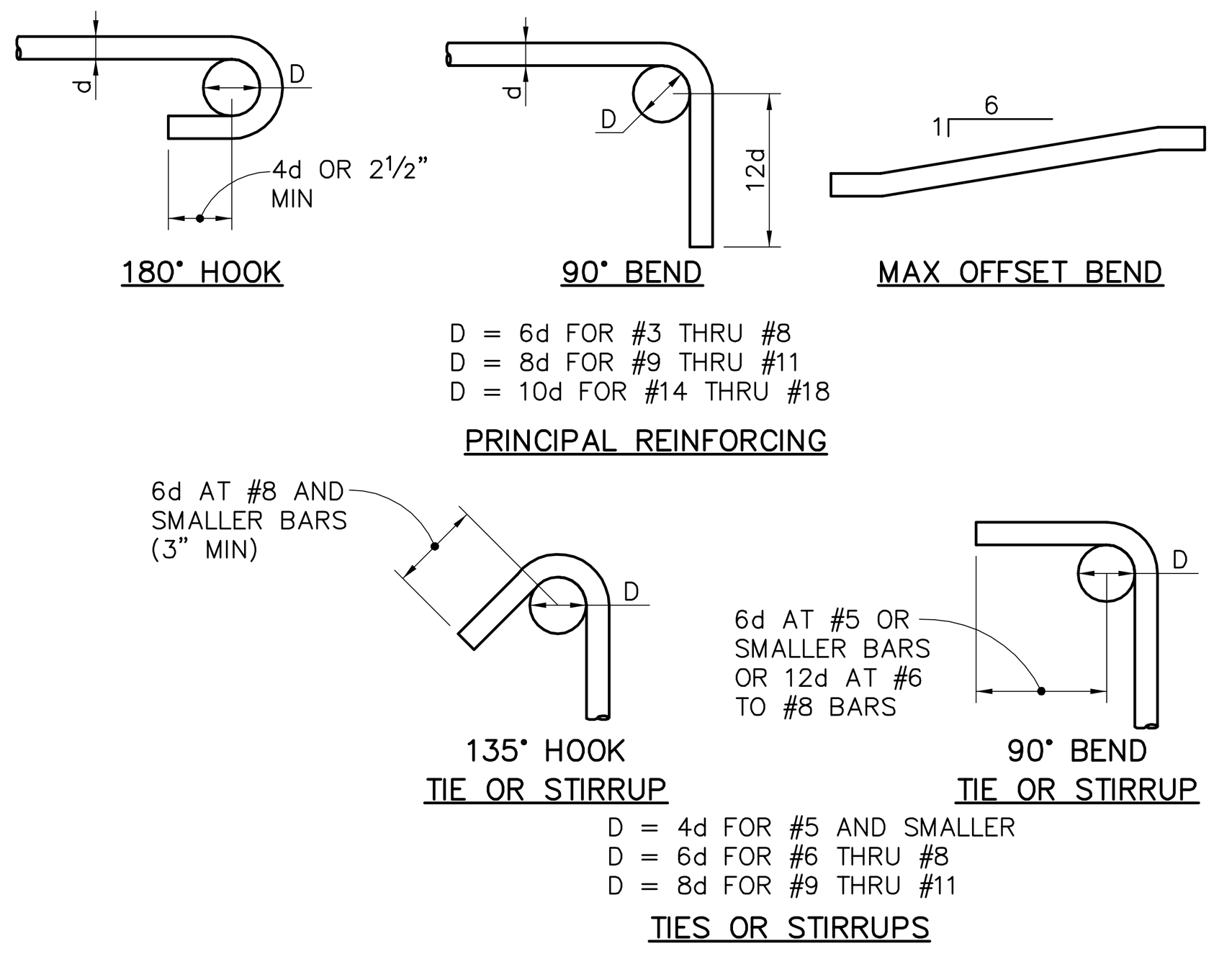
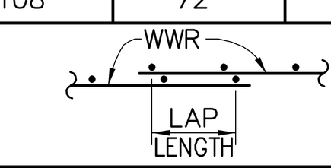


NOTES:
1. ALL BENDS SHALL BE MADE COLD.
2. #14 & #18 BARS SHALL BE BEND-TESTED AND APPROVED PRIOR TO BENDING.

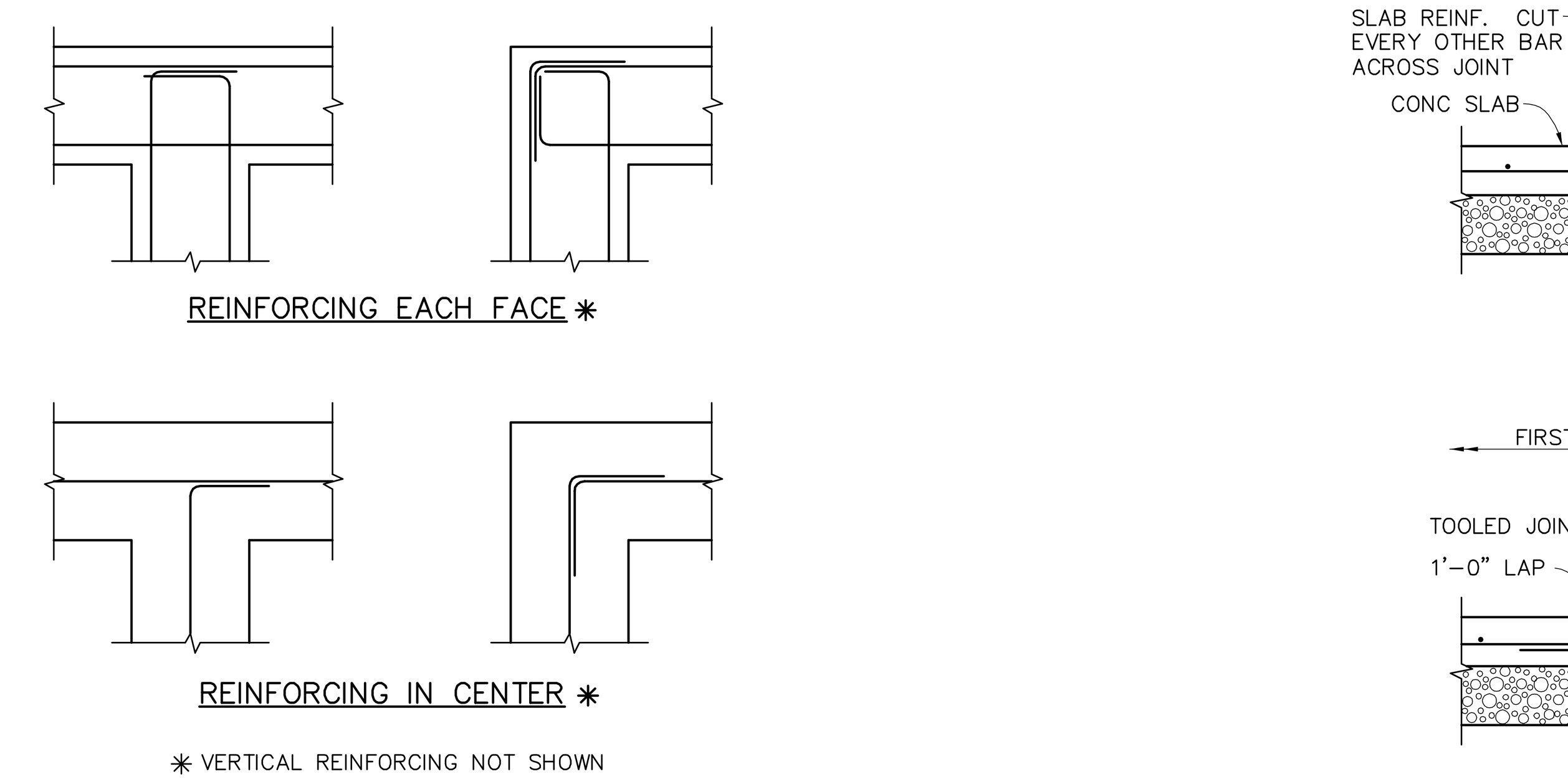
1/S501 TYPICAL BAR HOOKS & BENDS
NO SCALE

LAP SPLICE SCHEDULE

BAR SIZE	f'c=3000 PSI		f'c=4000 PSI		f'c=5000 PSI	
	BOTTOM	TOP	BOTTOM	TOP	BOTTOM	TOP
#3	16"	18"	16"	16"	16"	16"
#4	18"	24"	16"	24"	16"	18"
#5	24"	30"	24"	30"	18"	24"
#6	36"	42"	30"	36"	27"	36"
#7	42"	54"	36"	48"	36"	42"
#8	54"	72"	48"	60"	42"	54"
#9	66"	84"	60"	78"	54"	66"
#10	78"	102"	72"	90"	66"	84"
#11	96"	120"	84"	108"	72"	96"
WWR 6x6 – W8 MAX	8", MEASURED FROM TRANSVERSE WIRE AT EDGE OF SHEET		 WWR LAP LENGTH			
WWR 12x12 – W8 MAX	14", MEASURED FROM TRANSVERSE WIRE AT EDGE OF SHEET					

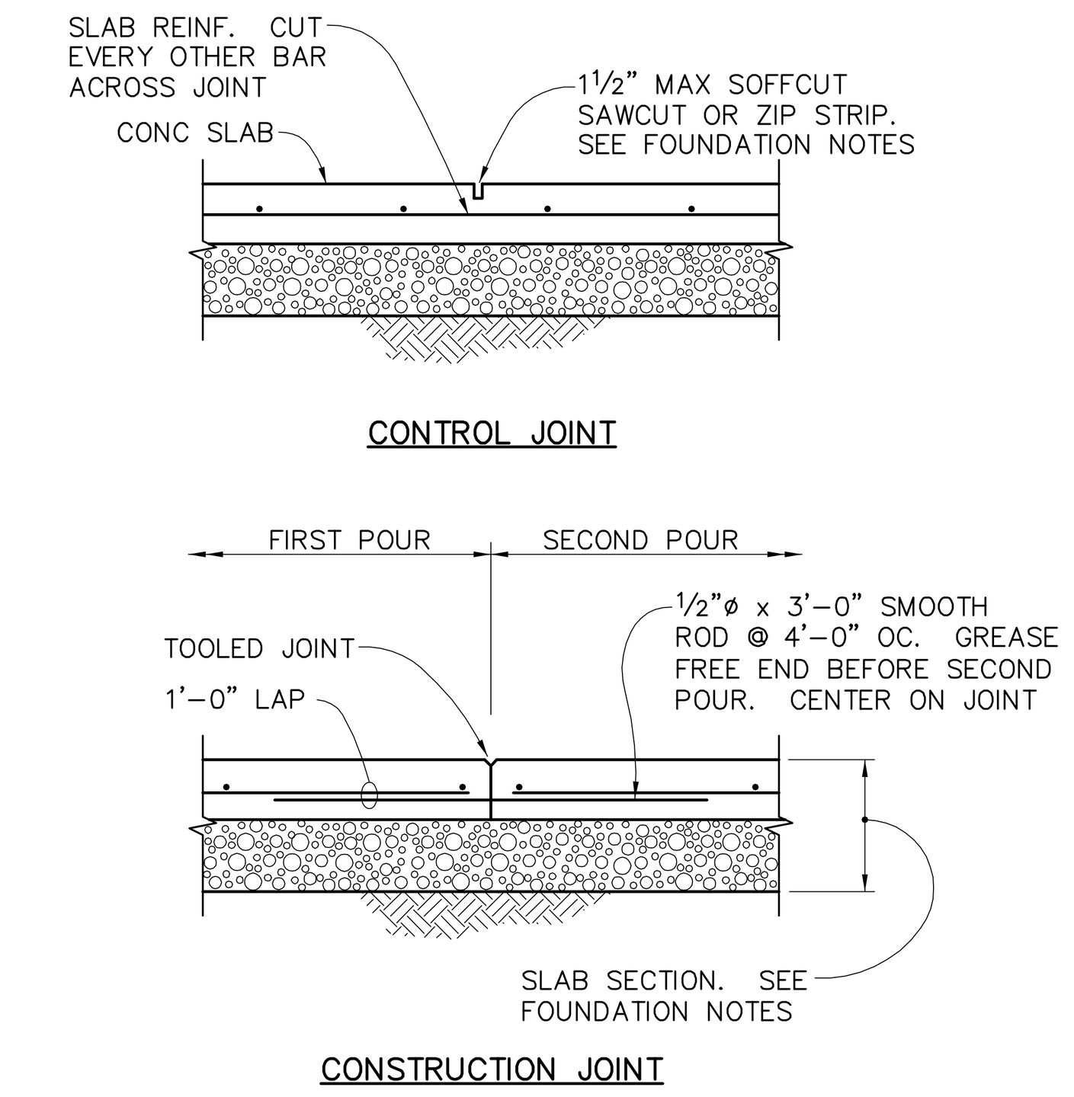
NOTES:
1. LAP SPLICE LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
2. THE TOP BAR LAP SPLICE SHALL BE USED FOR HORIZONTAL BARS WHERE THERE IS 12" OR MORE OF FRESH CONCRETE BELOW THE BAR. WALL HORIZONTAL BARS ARE 'TOP BARS'. WALL VERTICAL BARS ARE 'BOTTOM BARS'.
3. WHEN TWO BARS OF DIFFERENT SIZES ARE SPLICED, USE THE SHORTER LAP LENGTH.
4. STAGGER LAP SPLICES OF ADJACENT BARS BY 24".
5. INCREASE LAP SPLICE LENGTH BY A FACTOR OF 1.3 FOR EPOXY COATED TOP BARS AND 1.5 FOR EPOXY COATED BOTTOM BARS AND 1.33 FOR LIGHT WEIGHT CONCRETE.
6. MINIMUM CENTER TO CENTER BAR SPACING: 3" FOR #6 AND SMALLER, 5" FOR #7 AND LARGER. INCREASE LAP LENGTH BY A FACTOR OF 1.7 FOR SMALLER SPACING, BUT NO LESS THAN 1½" CLEAR DISTANCE FOR #8 AND SMALLER; AND 2½" CLEAR DISTANCE FOR #9 AND LARGER.

2/S501 LAP SPLICE SCHEDULE
NO SCALE

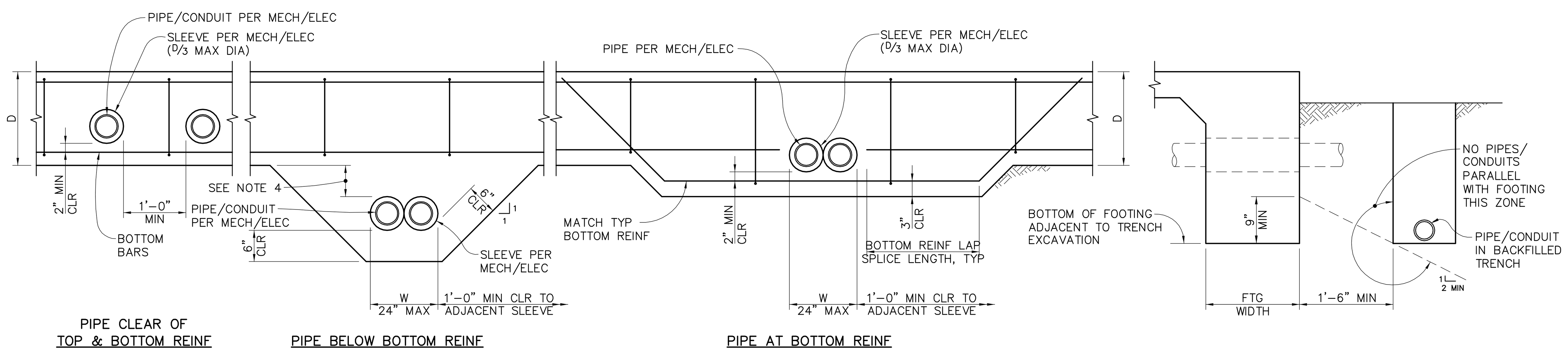


NOTES:
1. d = BAR DIAMETER
2. SEE TYPICAL BAR HOOKS & BENDS FOR MIN HOOK DIMENSIONS.

3/S501 FOOTING AND WALL INTERSECTIONS
NO SCALE

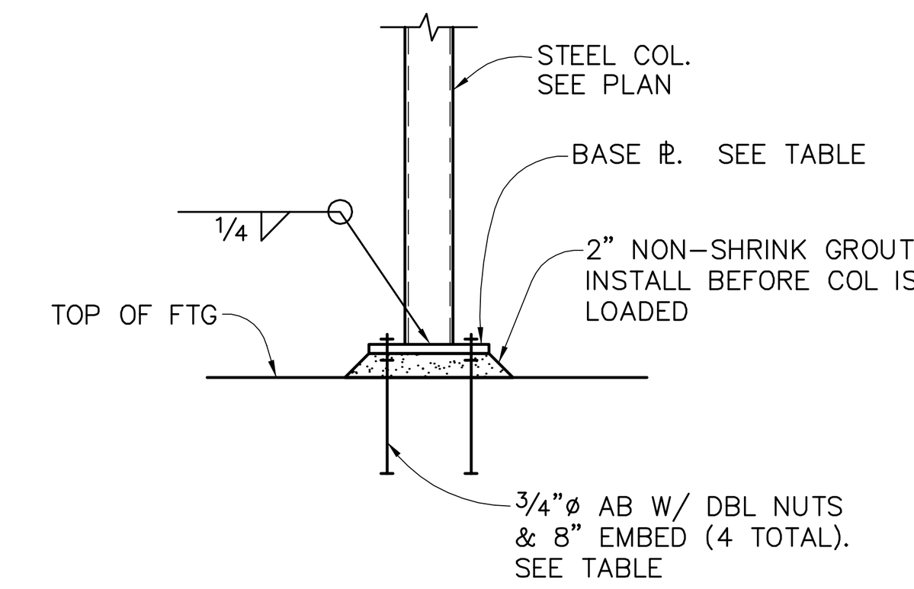


4/S501 TYPICAL SLAB JOINTS
NO SCALE



NOTES:
1. SLEEVE ID 2" LARGER THAN PIPE/CONDUIT OD OR BELL OD.
2. SEAL VOID BETWEEN PIPE/CONDUIT AND SLEEVE PER MECH/ELEC.
3. DETAIL APPLICABLE TO MAXIMUM 8"ø SLEEVE.
4. NO FTG EXTENSION REQ'D FOR PIPE/CONDUIT DEEPER THAN 12" BELOW FTG (SLEEVE STILL REQ'D). EXCAVATE AT LEAST 6 INCHES UNDER AND 18 INCHES WIDER THAN THE PIPE SLEEVE ACROSS THE WIDTH OF THE FOOTING. THE EXCAVATION SHALL BE FILLED WITH LEAN CONCRETE.

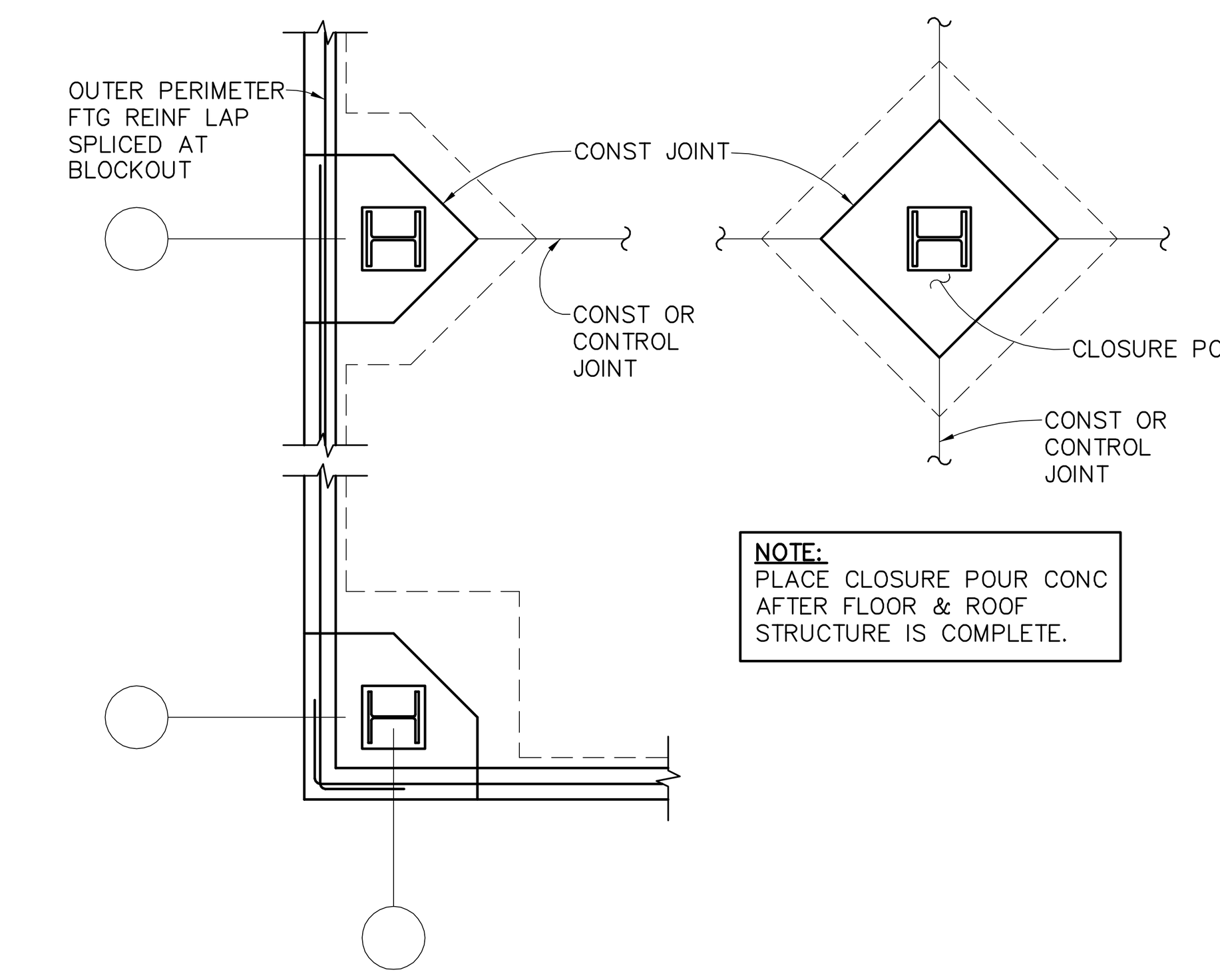
5/S501 TYPICAL FOOTING PENETRATIONS
NO SCALE



COLUMN	BASE PLATE	ANCHOR BOLT GRID
HSS 4x4 OR 4"ø PIPE HSS 3½x OR 3½"ø PIPE	℄¾"x10"x0'-10"	7"x7"
HSS 5x5 OR 5"ø PIPE	℄¾"x11"x0'-11"	8"x8"
HSS 5x7	℄¾"x11"x0'-11½"	8"x9"
HSS 6x6 OR 6"ø PIPE	℄¾"x12"x1'-0"	9"x9"
HSS 7x7	℄¾"x11½"x0'-11½"	9"x9"
HSS 12x12 OR 12"ø PIPE	℄¾"x18"x1'-16"	1'-3"x1'-3"

NOTES:
1. TYPICAL COLUMN BASE, UNLESS NOTED OTHERWISE.

6/S501 TYPICAL COLUMN TO FOOTING CONNECTION
NO SCALE



NOTE:
PLACE CLOSURE POUR CONC AFTER FLOOR & ROOF STRUCTURE IS COMPLETE.

7/S501 TYPICAL SLAB BLOCKOUTS
NO SCALE

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Revisions:	Date
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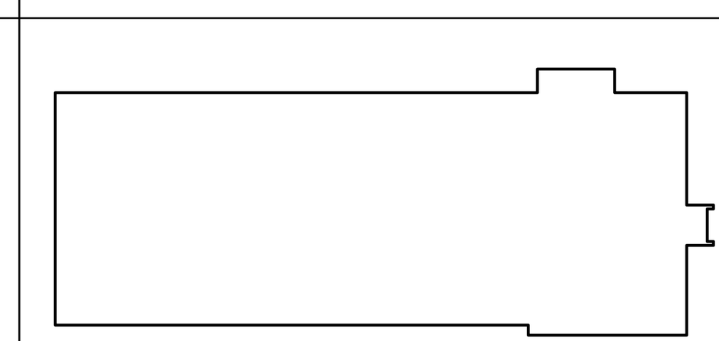
KEY PLAN



STAMP

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ADVANCE DESIGN CONSULTANTS, INC.
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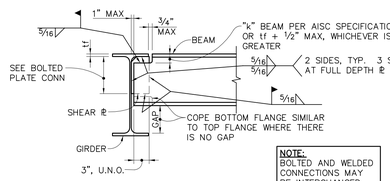
P: (408) 287-1881 F: (408)294-3186 www.adcengineers.com

PO# 14-308-39

Drawing Title: TYPICAL CONCRETE SECTIONS AND DETAILS
Approved: Project Director
Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.
Location: 10535 HOSPITAL WAY, MATHER, CA.
Date: 4/14/16
Checked: DLL
Drawn: JJD
Project Number: 612-400
Building Number: 642
Drawing Number: S501
Dwg. of

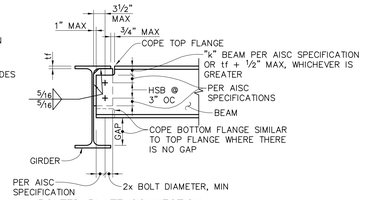
Office of Facilities Management
Department of Veterans Affairs

VA FORM 08-6231
(20142291S501) 2014229



WELDED PLATE CONNECTION

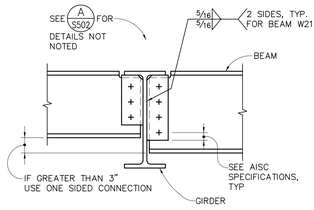
NOTE:
BOLTED AND WELDED CONNECTIONS MAY BE INTERCHANGED



BOLTED PLATE CONNECTION

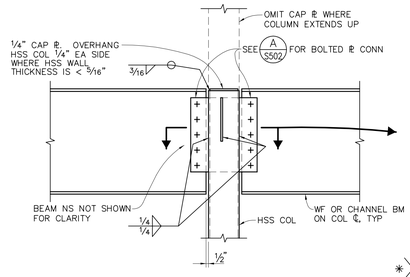
BEAM SIZE	NUMBER OF BOLTS	BOLT SIZE/TYPE	SHEAR ℄ THICKNESS
C8–C12, W8–W10	2 @ 3" OC	3/4"ø A325X	3/8"
C13–C15, W12–W14	3 @ 3" OC	3/4"ø A325X	3/8"
C18, W16	4 @ 3" OC	3/4"ø A325X	3/8"
W18, W21	5 @ 3" OC	3/4"ø A325X	3/8"
W24	6 @ 3" OC	3/4"ø A325X	3/8"
W27	7 @ 3" OC	3/4"ø A325X	3/8"
W30	8 @ 3" OC	3/4"ø A325X	3/8"
W36	9 @ 3" OC	3/4"ø A325X	3/8"

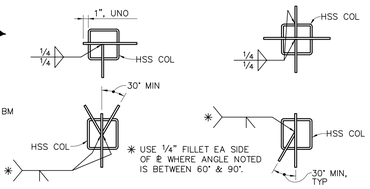
A S502 SINGLE PLATE CONNECTION
1" = 1'-0"



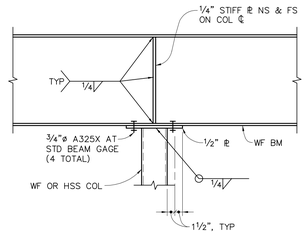
NOTE:
USE ONE SIDED CONNECTION AT MOMENT FRAME/BRACED FRAME GIRDER OR WHERE OPPOSITE BEAMS ARE OFFSET BY 12" OR MORE.

B S502 TWO-SIDED BOLTED PLATE CONN
1" = 1'-0"

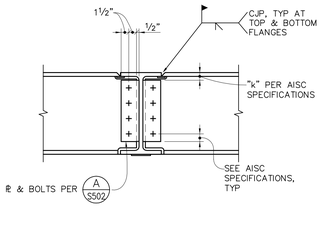




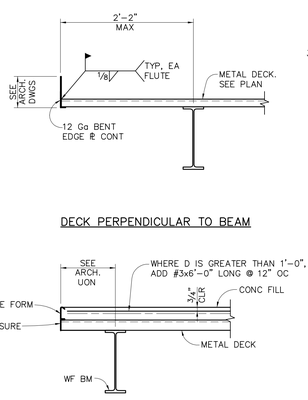
C S502 BEAM TO HS COLUMN CONN
1" = 1'-0"



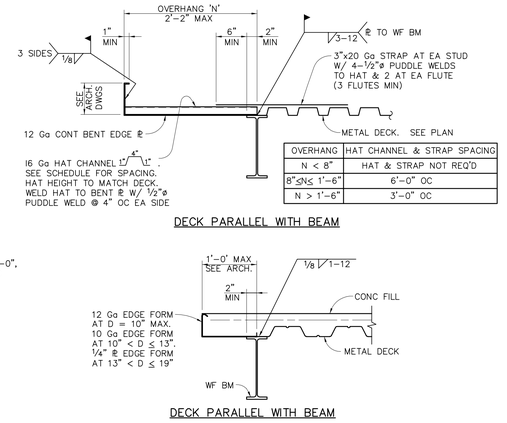
D S502 BEAM OVER COLUMN
1" = 1'-0"



E S502 BEAM TO BEAM MOMENT CONN
1" = 1'-0"



DECK PERPENDICULAR TO BEAM



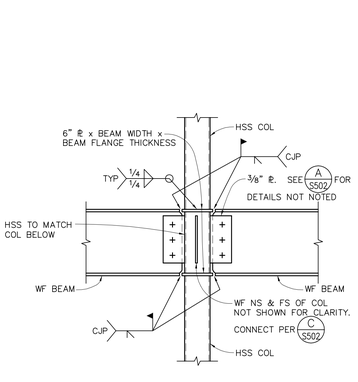
OVERHANG	HAT CHANNEL & STRAP SPACING
N < 8"	HAT & STRAP NOT REQ'D
8" ≤ N ≤ 1'-6"	6'-0" OC
N > 1'-6"	3'-0" OC

DECK PARALLEL WITH BEAM

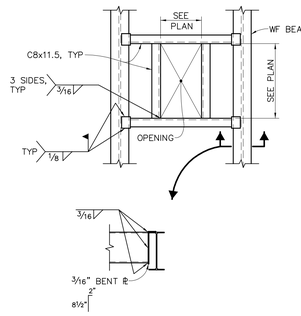
DECK PERPENDICULAR TO BEAM

DECK PARALLEL WITH BEAM

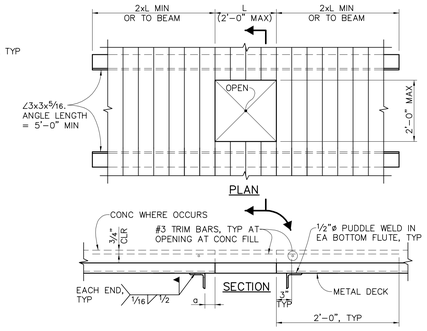
F S502 SECTION
1" = 1'-0"



G S502 BEAM TO COLUMN MOMENT CONN
1" = 1'-0"



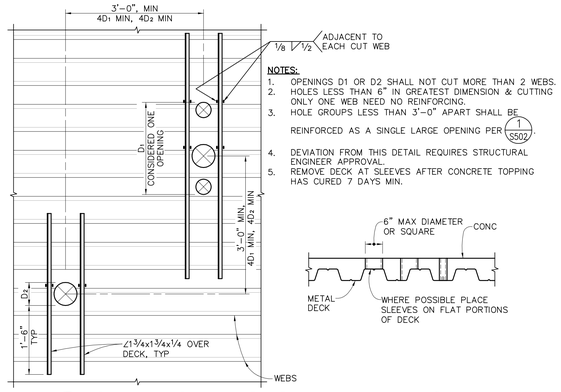
1 S502 FRAMED DECK OPENING
3/4" = 1'-0"



TYPICAL OPENING THROUGH STEEL

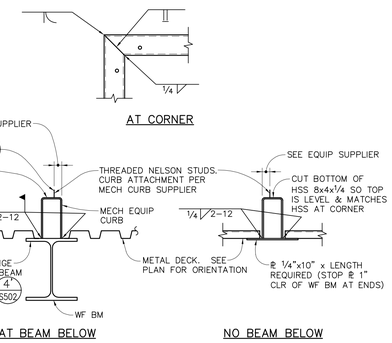
NOTE: THESE OPENINGS ARE NOT SHOWN ON FRAMING PLANS.
a = 2" TYP, ADJACENT ∠3x3 MAY BE OMITTED WHERE DISTANCE "a" TO A BEAM FLANGE IS 8" OR LESS.

2 S502 SMALL DECK PENETRATION
1" = 1'-0"

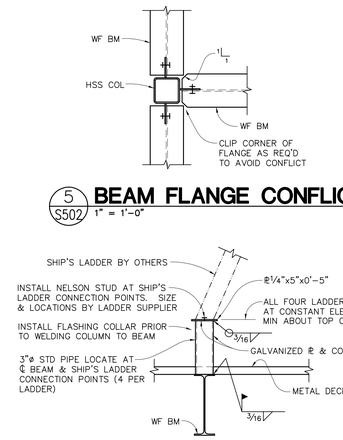


NOTES:
1. OPENINGS D1 OR D2 SHALL NOT CUT MORE THAN 2 WEBS.
2. HOLES LESS THAN 6" IN GREATEST DIMENSION & CUTTING ONLY ONE WEB NEED NO REINFORCING.
3. HOLE GROUPS LESS THAN 3'-0" APART SHALL BE REINFORCED AS A SINGLE LARGE OPENING PER 1 S502.
4. DEVIATION FROM THIS DETAIL REQUIRES STRUCTURAL ENGINEER APPROVAL.
5. REMOVE DECK AT SLEEVES AFTER CONCRETE TOPPING HAS CURED 7 DAYS MIN.

3 S502 SLEEVES THROUGH METAL DECK
3/4" = 1'-0"



4' S502 4 S502 DETAIL
1" = 1'-0"



5 S502 BEAM FLANGE CONFLICT
1" = 1'-0"

6 S502 DETAIL
1" = 1'-0"

Revisions:	Date
FINAL BID DOCUMENTS (14–251)	4/14/16
100% CONSTRUCTION DOCUMENTS (14–248)	1/22/16
100% DESIGN DEVELOPMENT (14–244)	10/23/15
50% DESIGN DEVELOPMENT (14–233)	8/21/15
100% SCHEMATIC DESIGN (14–185)	3/6/15

CONSULTANTS:
BIGGS CARDOSA ASSOCIATES INC
STRUCTURAL ENGINEERS
865 The Alameda
San Jose, California 95126
408-296-5515

KEY PLAN

STAMP

REGISTERED PROFESSIONAL ENGINEER
MARK A CARDOSA
No. S2279
Exp. 3/31/18
STRUCTURAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEERS:
ADVANCE DESIGN CONSULTANTS, INC.
998 PARK AVENUE SAN JOSE CALIFORNIA 95126
P: (408) 287-1881 F: (408)294-3186 www.adcengineers.com

PO# 14-308-39

Drawing Title: TYPICAL STEEL SECTIONS AND DETAILS

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date: 4/14/16 | Checked: DLL | Drawn: JJD

Project Number: 612-400

Building Number: 642

Drawing Number: S502

Dwg. of

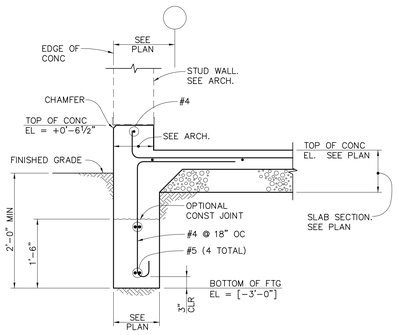
Office of Facilities Management

Department of Veterans Affairs

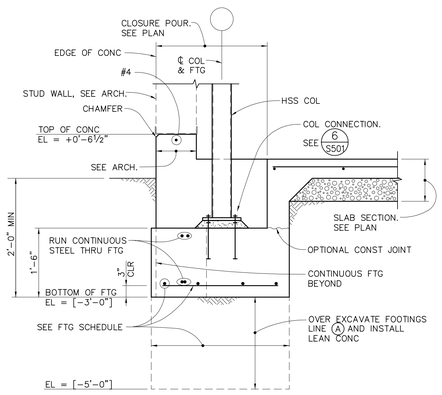
VA FORM 08-6231

(20142291S502) 2014229

W:\2014\2014229\Task_1_Primary_Care\20142291S502.dwg 4-26-16 07:10:20 AM JJD



A S503 SECTION
3/4" = 1'-0"



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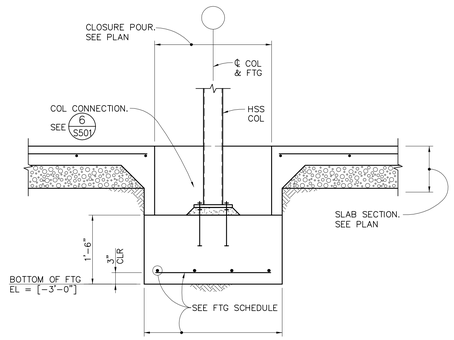
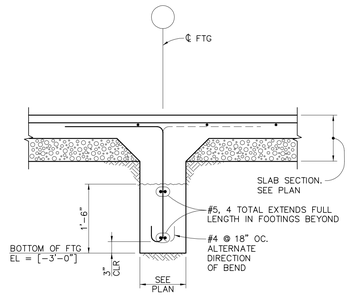
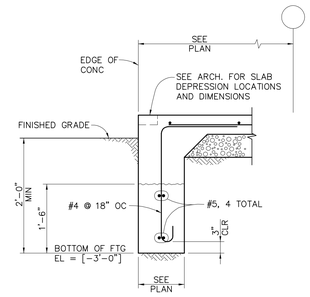
3/4" = 1'-0"



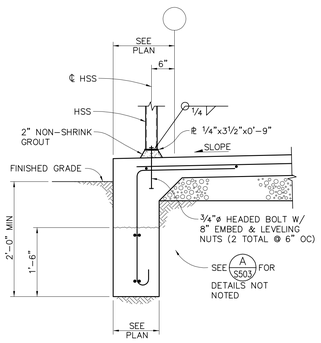
C S503 SECTION
3/4" = 1'-0"



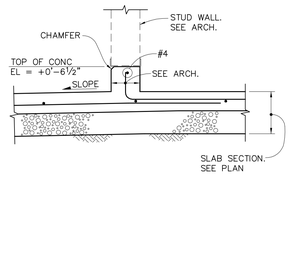
D S503 SECTION
3/4" = 1'-0"



E S503 SECTION
3/4" = 1'-0"



F S503 SECTION
3/4" = 1'-0"



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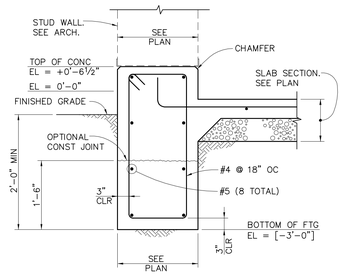
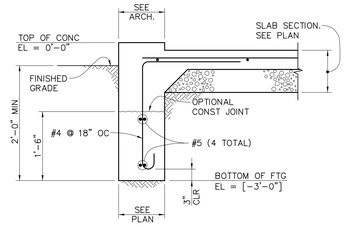
3/4" = 1'-0"



H S503 SECTION
3/4" = 1'-0"



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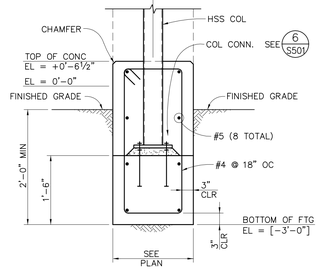
3/4" = 1'-0"



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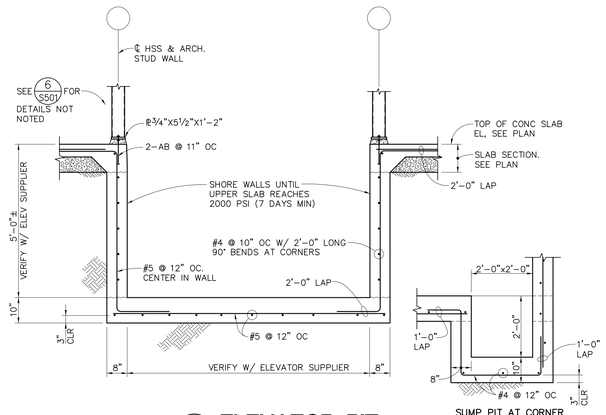
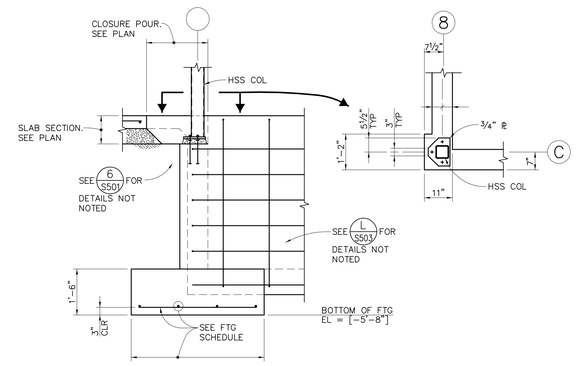
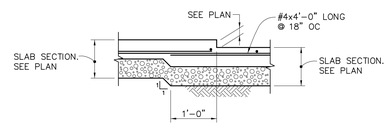
3/4" = 1'-0"



L S503 ELEVATOR PIT
½" = 1'-0"



M S503 SECTION
½" = 1'-0"



N S503 SECTION
3/4" = 1'-0"

Revisions:	Date
FINAL BID DOCUMENTS (14-251)	4/14/16
100% CONSTRUCTION DOCUMENTS (14-248)	1/22/16
100% DESIGN DEVELOPMENT (14-244)	10/23/15
50% DESIGN DEVELOPMENT (14-233)	8/21/15
100% SCHEMATIC DESIGN (14-185)	3/6/15

CONSULTANTS:

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San Jose, California 95126
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BCA

KEY PLAN

STAMP

REGISTERED PROFESSIONAL ENGINEER
MARK A CARDOSA
No. S2279
Exp. 3/31/18
STATE OF CALIFORNIA
STRUCTURAL

ARCHITECT/ENGINEERS:

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998 PARK AVENUE SAN JOSE CALIFORNIA 95126
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ATTENTION:

PO# 14-308-39

Drawing Title: FOUNDATION SECTIONS AND DETAILS

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date: 4/14/16 | Checked: DLL | Drawn: JJD

Project Number: 612-400

Building Number: 642

Drawing Number: S503 Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

(20142291S503) 2014229

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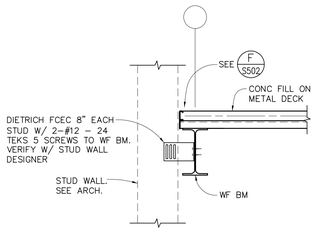
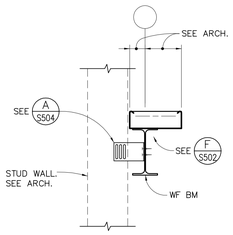


A S504 **SECTION**
3/4" = 1'-0"



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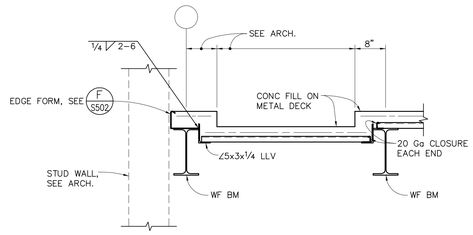
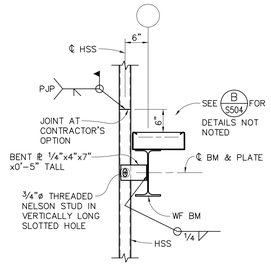
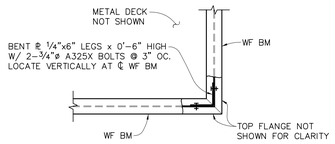
3/4" = 1'-0"



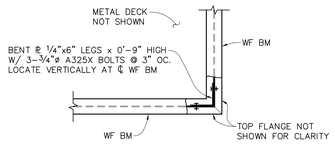
C S504 **SECTION**
3/4" = 1'-0"



D S504 **SECTION**
3/4" = 1'-0"



W8x BEAMS



W12x BEAMS

1 S504 **DETAIL**
3/4" = 1'-0"

Revisions:	Date
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REGISTERED PROFESSIONAL ENGINEER
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STRUCTURAL
STATE OF CALIFORNIA

ARCHITECT/ENGINEERS:

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P: (408) 287-1881 F: (408)294-3186 www.adceng ineers.com

ATTENTION:

PO# 14-308-39

Drawing Title: FLOOR FRAMING SECTIONS AND DETAILS

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date: 4/14/16 | Checked: DLL | Drawn: JJD

Project Number: 612-400

Building Number: 642

Drawing Number: S504 Dwg. of

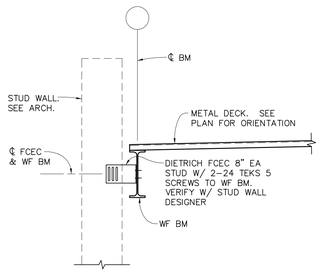
Office of Facilities Management

Department of Veterans Affairs

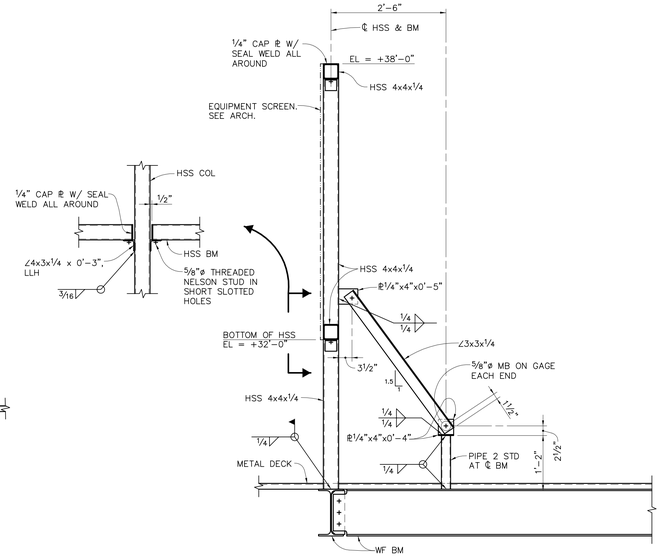
VA FORM 08-6231

(20142291S504) 2014229

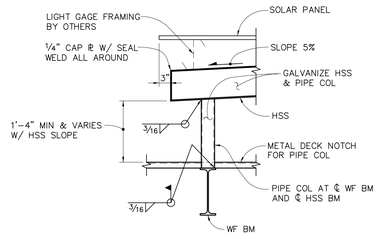
W:\2014\2014229\Task_1_Primary_Care\20142291S504.dwg 4-26-16 07:11:06 AM JJD



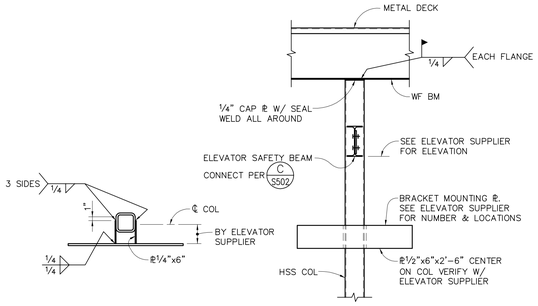
A S505 **SECTION** 3/4" = 1'-0"



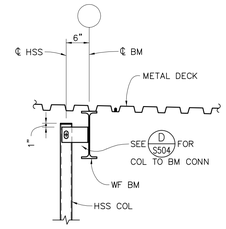
B S505 **SECTION** 3/4" = 1'-0"



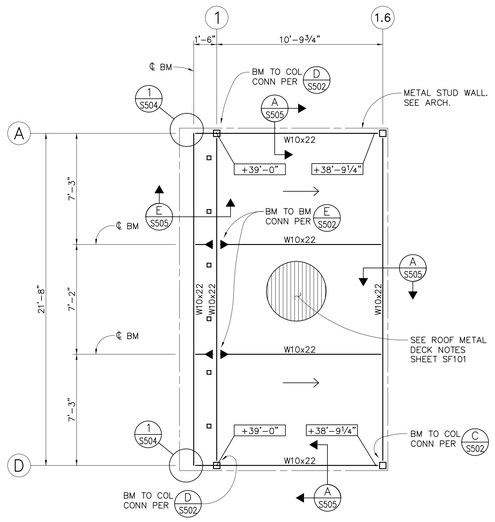
C S505 **SECTION** 3/4" = 1'-0"



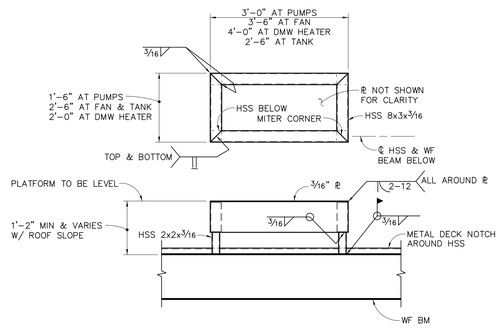
D S505 **SECTION** 3/4" = 1'-0"



E S505 **SECTION** 3/4" = 1'-0"



1 S505 **UPPER ROOF PLAN** 1/4" = 1'-0"



2 S505 **MECHANICAL EQUIPMENT PLATFORM** 3/4" = 1'-0"

Revisions:	Date
FINAL BID DOCUMENTS (14-251)	4/14/16
100% CONSTRUCTION DOCUMENTS (14-248)	1/22/16
100% DESIGN DEVELOPMENT (14-244)	10/23/15
50% DESIGN DEVELOPMENT (14-233)	8/21/15
100% SCHEMATIC DESIGN (14-185)	3/6/15

CONSULTANTS:

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San Jose, California 95126
408-296-5515

BCA

KEY PLAN

STAMP

REGISTERED PROFESSIONAL ENGINEER
MARK A CARDOSA
No. S2279
Exp. 3/31/18
STATE OF CALIFORNIA STRUCTURAL

ARCHITECT/ENGINEERS:

ADVANCE DESIGN CONSULTANTS, INC.

998 PARK AVENUE SAN JOSE CALIFORNIA 95126
P: (408) 287-1881 F: (408)294-3186 www.adcengineers.com

ATTENTION:

PO# 14-308-39

Drawing Title: ROOF FRAMING SECTIONS AND DETAILS

Approved: Project Director

Project Title: CONSTRUCT PRIMARY CARE SERVICES BLDG.

Location: 10535 HOSPITAL WAY, MATHER, CA.

Date: 4/14/16 | Checked: DLL | Drawn: JJD

Project Number: 612-400

Building Number: 642

Drawing Number: S505 Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

(20142291S505) 2014229

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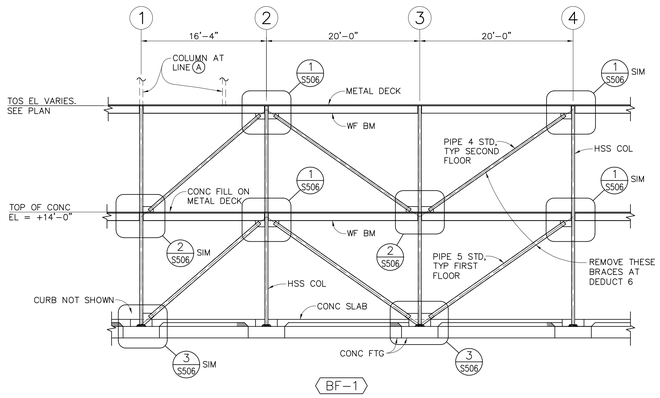
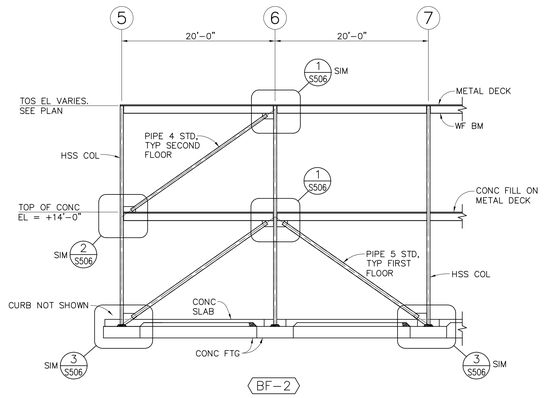
three inches = one foot 6" 0
one and one half inches = one foot 1 6" 0
one inch = one foot 2 6" 0
three quarters inch = one foot 2 6" 0
one half inch = one foot 4 0
three eighths inch = one foot 4 0
one quarter inch = one foot 8 0
one eighth inch = one foot 16 0



BF-1

BRACED FRAME ELEVATION

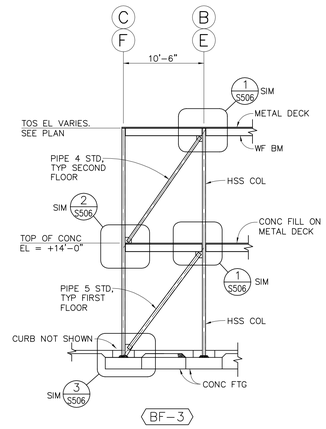
1/8" = 1'-0"



BF-2

BRACED FRAME ELEVATION

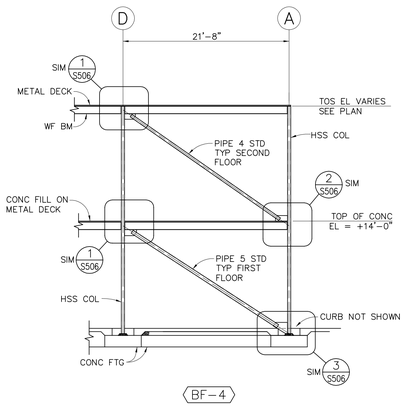
1/8" = 1'-0"



BF-3

BRACED FRAME ELEVATION

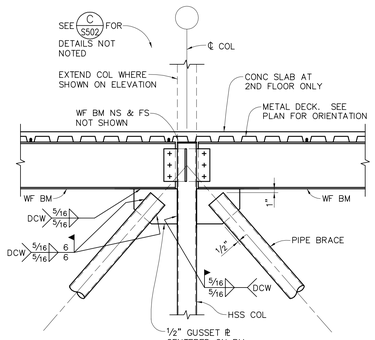
1/8" = 1'-0"



BF-4

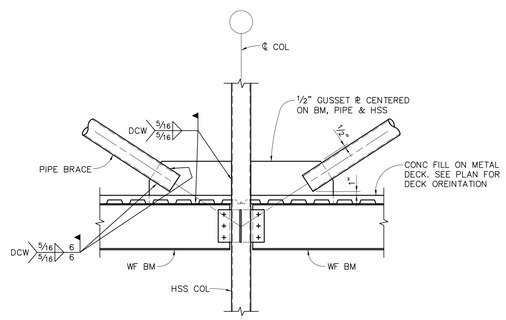
BRACED FRAME ELEVATION

1/8" = 1'-0"



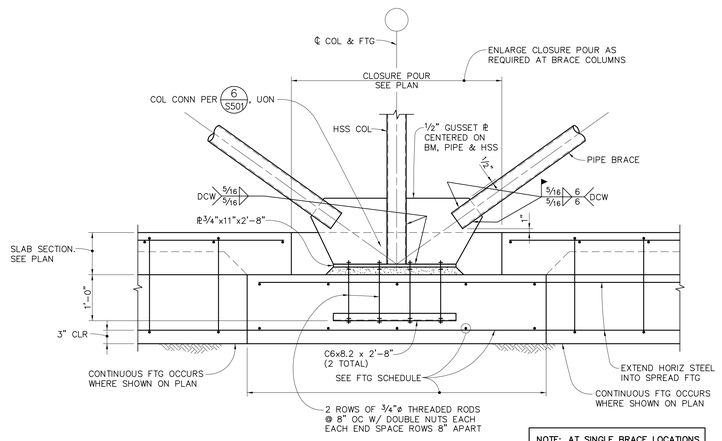
1 S506 **DETAIL**

¾" = 1'-0"



2 S506 **DETAIL**

¾" = 1'-0"



3 S506 **DETAIL**

¾" = 1'-0"

NOTE: AT SINGLE BRACE LOCATIONS USE 1'-9½" LONG BASE PLATE W/ 6-¾"ø THREADED RODS & 1'-9½" LONG C6x8.2 CHANNELS

FINAL BID DOCUMENTS (14-251)	4/14/16
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100% DESIGN DEVELOPMENT (14-244)	10/23/15
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Revisions:	**Date**

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ATTENTION:

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(20142291S506) 2014229

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